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Good practices for managing Australia's public and community housing assets

authored by

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ACRONYMS

AAM	Advanced Asset Management
ADS	Asset Dwelling Service
AHURI	Australian Housing and Urban Research Institute Ltd.
AIHW	Australian Institute of Health and Welfare
AM	Asset Management
BEAM	Built Environment Asset Management
CADD	Computer Aided Design and Drafting
CAM	Core Asset Management
CIR©	Corporate Infrastructure Resources
CRE	Corporate Real Estate
CREM	Corporate Real Estate Management
CREAM	Corporate Real Estate Asset Management
CSHA	Commonwealth Social Housing Authority
DBMS	Database Management Systems
DHS	Department of Human Services (Victoria)
FaCSIA	Australian Government Department of Families, Community Services and Indigenous Affairs
GFC	Global Financial Crisis
HNZ	Housing New Zealand
HNZC	Housing New Zealand Corporation
IPWEA	Institute of Public Works Engineering Australia
IAM	Infrastructure Asset Management
IRIS	Integrated Resource Infrastructure Solutions
LAN	Local Area Network
LCC	Life Cycle Costing
MLP	Master Limited Partnership
NAHA	National Affordable Housing Agreement
NCRB	National Council on Rationalised Building
NPM	New Public Management
NPV	Net Present Value
ODM	Optimised Decision Making
OoH	Office of Housing (Victoria)
PAS	Property Assessment Survey
PPP	Public Private Partnership
PREM	Public Real Estate Management

PREAM	Public Real Estate Asset Management
REAM	Real Estate Asset Management
REIT	Real Estate Investment Trust
(including Equity REITs, Mortgage REITs and Hybrid REITs)	
REOC	Real Estate Operating Company
SMI	Strategic Management Initiative
TAM	Total Asset Management
WAN	Wide Area Network

EXECUTIVE SUMMARY

The broad project aims

This project investigates good practices for managing Australia's public and community housing assets. To a large extent the report concerns the identification of existing practices as an attempt to build a picture of asset management in public and community housing across Australia. But a report such as this cannot merely report current practice; in the attempt to search out good practices, or even best practice, external trends (local and international literature) and opinion (of those involved in managing public and community housing) necessarily must be pursued.

The report addresses not just good practices but emerging trends and related opinions. Underlying this is the identification of an emerging contextual or structural problem—a dichotomy of views of the role and purpose of asset management within a social and community housing policy context, between the extremes of governance and service provision.

The project's primary aims were to:

- Identify and examine the current state and attributes of asset management practices applicable to social housing in Australia.
- Discuss the key asset management issues and questions arising from international experience with social housing asset management.
- Identify the set of characteristics associated with best practice applied to social housing asset management in Australia.
- Review the literature and policy debates as they relate to the topics that emerge from each of the above objectives.

The primary approach was organisational rather than individual. The objective was to assess the asset management practices of public and community housing asset managers through consideration of State Housing Authorities (SHA). Therefore, the dominant approach was to ask individuals about their organisations' practices.

Asset management in public and community housing

Social housing management refers to an overall goal designed to produce and allocate housing services on a needs basis. Social housing asset management concerns the asset management practices of jurisdictions engaged in providing and managing social housing stock. This usually includes acquisition, sale, stock transfer, renting, allocation, repairs and maintenance. The focus on asset management in the specific context of social housing is a relatively new phenomenon which reflects increasing interest in the long-term value of real estate based on the investment strategies of the managing organisation. It does not necessarily address the wider context of social housing policy, but it plays a role in the management of rents, maintenance, repairs and financial management (Gruis & Nieboer 2004a). Social housing asset management is evolving in a context of growing population and housing demand, rising public expectation, an increasing focus on improving the delivery of services and achieving value for money. A good deal of the complexity of asset management of public housing derives from its place at the intersection of financial management, portfolio management and housing (real estate) services.

Australian governments, through their social housing agencies, hold some of the largest portfolios of real estate assets in Australia and they face immense challenges in the identification of the correct skills, systems and models of practice to improve

service delivery and management of these assets. Presently, public housing stock in Australia is around 334 000 housing units (Australian Institute of Health and Welfare 2009) accounting for approximately 5 per cent of total housing stock and 24 per cent of rental housing. In the past two decades, Australia has made various reforms in public housing asset management, but there is still a long way to go in terms of the adoption of good asset management practice, which is found across jurisdictions to be inconsistent and relatively poorly developed. This challenge is not just because of funding constraints, poor design and ageing stock (Arthurson 1998) but because the complexity or the management tasks associated with demand and supply is so great and the policy contexts so variable, that there are no quick and easy solutions. There has also been a gradual development of understanding of asset management, which has evolved only slowly from a highly technical focus toward a greater consideration of strategic issues and inclusion of social policy.

An array of issues influences the management of public housing organisations today. First, the form and emphasis that social housing asset management practices take varies over time and among states and territories. Second, demand for public housing now significantly exceeds supply with housing stress and social problems significantly flowing into the private rental sector in particular (Randolph et al. 2004). Third, the sector has become increasingly marginalised from the mainstream of housing provision in terms of its philosophy and economic impact in Australia (Burke 2005). In Australia, public housing asset holding is currently worth approximately $60 billion (Dunckley & Elliot 2008). However, policy interest in pursuing good asset management practices in social housing asset management across all states and territories is often undermined by political, social and economic factors.

The term *asset management* (AM) is difficult to accept as a philosophy and implement in practice because it means many things to different people. The umbrella term asset management covers many things. In property or real estate asset management, there are a plethora of terms that cover the activities and practices involved with managing those assets. Even when a single term is used, there seem to be different definitions for and understanding of that term. Asset management is a relatively new concept for public housing managers.

One of the core objectives of social housing is to ensure that all applicants have access to housing that is adequate, equitable and appropriate for living (service delivery). Currently, the policy context for social housing management is driven by a combination of market competition and government regulations through various housing organisations. Out of this policy mix has emerged recognition of the significance of sensible financial planning, service efficiency, strategic management and market forces. This type of asset management is what Priemus et al. (1999) referred to as ‘strategic housing asset management’. Also, strategic housing management may contain elements of portfolio asset management such as defining the desired mix of dwelling types and rent level, analysing the performance of the residential portfolio, defining guidelines for management, acquisition and disposition of the estates in the portfolio (Priemus et al. 1999).

Supporting literature

There is a small but growing literature on asset management of public housing, mostly because this is a relatively new and evolving concept for many public housing organisations and because there are relatively few and limited reviews and pilot studies. The literature is broadly of two types: empirical studies and policy reports by housing organisations as they conduct their own reviews or change the nature of their management systems; and research reports which critically evaluate or raise

theoretical issues. However the literature is disappointingly brief. There is a dearth of literature looking specifically at asset management practices for social housing.

It is possible to conclude that there is no magic bullet extant in the literature to be applied in Australia. There is no best practice model to be adopted. Rather, there is comfort about the existing directions in Australia, and support to move further.

Physical and financial attributes of social housing

It is not possible to provide an executive summary of attributes of social housing according to jurisdiction. There is a very large amount of data which does not lend itself to aggregation or summary. Nevertheless, it may be noted that there is considerable information available with regard to the practical elements of attributes of social housing.

Asset management practice and trends

Management of public sector assets can generally be said to represent good current practice in asset management. However, best practice asset management must surely be framed with stronger and better connections between operational strategies and business strategies. The transition from good practice to best practice requires, in the first instance, development of appropriately useful models, and second, the implementation of these in practice.

There is growing awareness of strategic and corporate asset management models within the Australian social housing sector but a general lack of understanding of terms and difficulty in seeing past immediate technical issues toward implementation of the newer strategic approaches.

Policy implications

Asset management in social and community housing is inconsistently understood and diversely applied. Across the government jurisdictions in Australia, practices vary considerably and, more importantly, understanding of practices and terms is also variable.

There is a broad appreciation of the need for assessment of public housing asset conditions and practices with regard to housing stocks. Some housing organisations have only partly applied traditional asset management procedures, while others are already beginning to apply the market-oriented principles associated with strategic asset management and corporate real estate.

Yet, there is little literature that focuses specifically on asset management in social and community housing to back-up the asset manager. This study therefore provides the basis for improving the systematic application of good practice in asset management. It explores the themes of good practices for asset management and the principles of strategic asset management and corporate real estate management in the delivery of social housing services in Australia. This allows examination of the challenges facing asset managers, as well as the factors that are driving policy interest in these issues, and the contemporary approaches to addressing them.

Best practices

During the past decade, broader issues of social housing asset management practices have emerged as the centerpiece of federal, state and local efforts to improve the delivery of housing services. The researchers believe that social housing asset management should develop processes and procedures to identify good housing asset management practices and propagate them across the social housing

sector. Without these processes, the transfer of best practices is unlikely to occur, thus reducing significantly the effectiveness of efforts to improve financial and technical management of public housing.

Skills and role

There are inadequate skills present in the sector. This is consistent with it being an emerging field. Knowledge of terminology and practices is inconsistently applied and generally poor. This is not at all surprising, as asset management is a poorly structured and poorly defined field which confuses most, even experts. In particular, it may be approached from many standpoints, with definitions and strategies differing for each.

A greater effort must be made to define terms and to apply consistent practices. This means education, training and improved knowledge management. The role of the asset manager appears subservient to policy makers in this heavily political context. This is probably appropriate; however (as in commercial real estate management where obtaining a voice at the board level is extremely difficult) without an appropriate structure and governance, asset management can never perform to its best if subjected to constantly changing contexts, funding and decisions.

It is clear that asset managers would do things otherwise were they free to do so. In other words, they know that better practices might be applied—but can't see the point in the context of current policy.

Perhaps the most contentious finding of this research is that a polarisation of views emerged, particularly from the qualitative analysis. Two underlying epistemologies (belief structures) can be observed. Respondents were influenced by two underlying contexts: governance versus policy. This emerges from the background context of the individual and their training in either physical asset management or social policy. The two extremes may be described as: governance view and social policy view.

The governance perspective is that the role of the asset manager is to preserve the value of an asset. Thus responsibility is toward society's wealth and it is necessary to maximise value and minimise waste. In this view, it is important to maintain assets and ensure that their ability to provide service is preserved until the asset is no longer required, at which time maximum asset value may be realised. In this view service delivery becomes a utilisation problem, where an underutilised asset represents waste. Treasury rules for assets may drive or support this approach.

The social policy perspective is that the role of the asset manager is to provide the facilities required to deliver service. Thus responsibility is toward society's service provision and it is necessary to maximise service delivery and minimise waste. In this view, it is important to utilise assets in service delivery and ensure that their ability to provide service is not compromised by poor maintenance, inappropriate location or poor suitability. The asset has no intrinsic value except where that value may be released to enable better service delivery. In this view the dwelling becomes a suitability problem, where an unsuitable asset represents waste.

It is unlikely that asset managers within social housing organisations would stand entirely within one of these viewpoints. It is important to recognise both viewpoints as being valid, and to build an asset management environment which can bridge the two. Thus, asset management policy should be designed in explicit recognition of each and should provide the language, tools and techniques valid to both approaches.

Conclusion

This project has a large scope and many different aspects and viewpoints. It has described the international and domestic treatment of social housing asset management, and along the way identified that practices are very variable and implementation inconsistent.

Social housing in Australia would benefit from a new approach to social housing asset management, with consistency in approach across all jurisdictions, and with a well-defined knowledge base not dominated by one particular perspective, but accommodating both.

1 INTRODUCTION

This report presents the findings of a major study to identify good practices for managing Australia's public and community housing (social housing) assets. To a large extent the report concerns the identification of existing strategies and practices as an attempt to build a picture of asset management in public and community housing across Australia. But a report such as this cannot merely report current practice; in the attempt to search out good practices, or even best practice, external trends (local and international literature) and opinions (of those involved in managing public and community housing) necessarily must be pursued.

The report specifically concerns asset management of social housing assets and does not address the wider context of social housing policy and management of social housing generally.

In this context, the report addresses not just plans and practices but emerging trends and related opinions of asset management. Underlying this is the identification of an emerging contextual or structural problem – a conflict in the role and purpose of asset management within a social and community housing policy context.

The project from which this report is derived commenced well before the current *global financial crisis* (GFC). The research design and bulk data collection therefore assumed a stable context, an operating environment in which change was relatively slow and problems long-standing. The burning background issue appeared to be the problem of stretching limited funds further, to manage the conflict between maintenance and renewal within a severely constrained and dwindling capacity to fund activities. In contrast, the GFC, and more importantly the federal government's stimulus response through increased funding of the public and community housing sector, fundamentally changed the character of the sector and has influenced the priorities and views of respondents. While the GFC does not materially affect the findings of this study, it does serve to highlight the underlying structural problems which, while different, are replicated across the various jurisdictions. So, while the federal government's $6.4 billion *Social Housing Initiative*—part of the *Nation Building – Economic Stimulus Plan*—has not been addressed within the study, its impact has materially affected the findings and conclusions and indirectly highlighted factors which might otherwise have remained hidden.

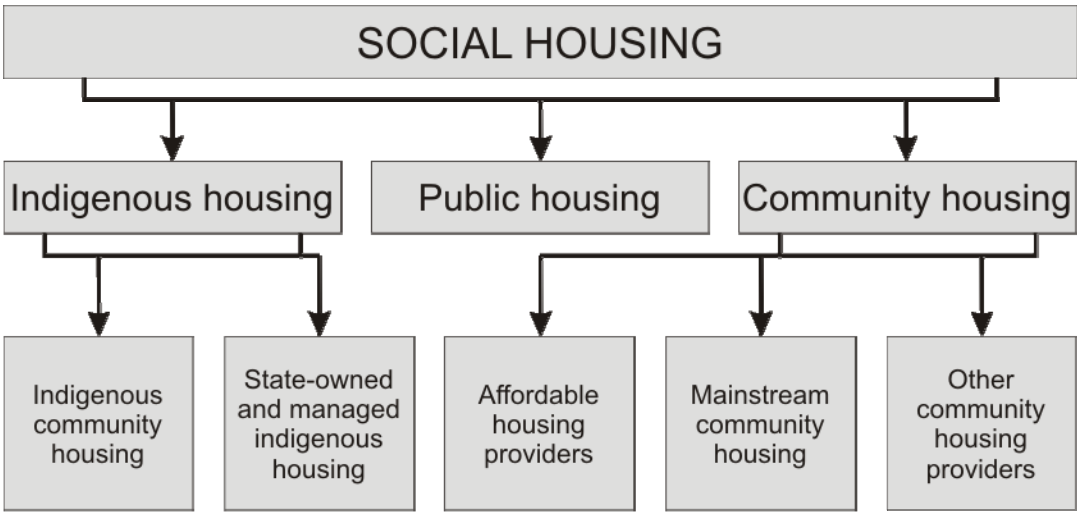
1.1 Social housing

Social housing is housing that is provided at affordable rents and on a secure basis to people in need of accommodation. It is generally provided by government, private investors and not-for-profit organisations such as registered social housing organisations, and is highly regulated by the government. Social housing is structured on the basis of rental and allocation policy, stating in advance what factors will be taken into account when deciding who gets preference for the limited amount of social housing on offer. These policies often include preference criteria that are set out in the guidelines. In Australia, there are three main foci for social housing portfolios, including public, community and indigenous housing (Figure 1). For the purpose of this study, indigenous housing (which has its own special issues) has not been specifically addressed, but it has not been excluded (a comprehensive discussion of indigenous housing may be found in Eringa et al. (2008).

Public housing management consists of a variety of activities, categorised as technical management (maintenance, renovation, etc.), social management (housing allocation, etc.), financial management (treasury, rent policy) and tenure management

(letting, buying and selling). The literature on public housing asset management includes studies of building construction methods, facilities management, financial management, housing ownership and affordability. An array of issues influences the management of these public housing organisations today. First, the form and emphasis that social housing asset management practices take varies over time and among states and territories. Second, demand for public housing now significantly exceeds supply with housing stress and social problems significantly flowing into the private rental sector in particular (Randolph et al. 2004). Third, the sector has become increasingly marginalised from the mainstream of housing provision in terms of its philosophy and economic impact in Australia (Burke 2005). In Australia, public housing asset holding is currently worth around $60 billion (Dunckley & Elliot 2008). However, policy interest in implementing strategic plans and pursuing good practices in social housing asset management across all states and territories is often undermined by political, social and economic factors, such as financial limitations, building codes, planning standards, and conflicting roles and responsibilities between jurisdictions.

Figure 1: Australian social housing foci



Source: Phillips et al. (2009)

Until the 1980s, state and territory housing authorities (SHAs) focused on large acquisition programs to meet the needs of two target groups: low income families and older persons. As demand was high and the stock new, little attention was paid to its appropriateness and long-term viability, apart from some modernisation programs. Within the states, the size, physical condition, social and economic characteristics of public housing assets are reported as varying widely. A recent report about social housing availability in Australia shows that less than half of families in need were provided with public housing within three months of application (Roy Morgan Research 2007).

According to Burke (2005), one of the major factors for the declining performance of public housing management in meeting applicant needs, is that social housing has become increasingly marginalised from the mainstream of housing provision, not just in numbers, but in terms of its underlying implications, its impact on the Australian economy, and how society sees its purpose.

1.2 The policy context for social housing asset management

A historical context of social housing asset management is important because the quantity and quality of the physical conditions and stock of housing have changed over time, as have the regulations governing its allocation, rent and subsidy levels. Since the late 1970s, the number of dwellings available to rent from government housing agencies in Australia has reduced dramatically due to insufficient funding. However, since the 1990s state and territory governments have indicated interest in the application of strategic management as an effective tool for asset management of social housing – arising from the success of strategic planning in the business sector. Emerging trends in social housing management include stock transfer from SHAs to community housing providers and increase in the power of community housing providers to sell and acquire new stock, compulsory registration of housing providers, changes in housing allocation and rent-setting guidelines through the Commonwealth National Affordable Rental Scheme and Commonwealth National Affordable Housing Agreement (NAHA). In addition, the Nation Building Economic Stimulus Plan for social housing also provided funds for more social affordable housing to build across different jurisdictions in Australia in 2010 (National Shelter Inc. 2009). It also specified certain guidelines for new housing construction, including environmental sustainability and energy efficiency.

Generally, the characteristics of housing have changed and so have the demographics of the tenants who can access and be affected by it. The main historical context is the declining role of government in financial provision on the market. Across government jurisdictions in Australia, plans and practices vary considerably, and more importantly, understanding of practices and terms is also variable. A good deal of the complexity of asset management of public housing derives from its place at the intersection of financial management, portfolio management and housing (real estate) policy and services. Each of these contexts provides a somewhat similar perspective on the purposes of asset management, and emphasises different forms and types of terms. The terms ‘asset management’ and ‘portfolio management’ are multidisciplinary ways of managing real estate (housing) assets from the time of investment (acquisition) through the time of disposal, including management, leasing, operational/financial reporting, appraisals, audits, market review and asset disposition plans (Industry Commission 1993). All this is set in a policy context which concerns service delivery (provision of housing) rather than asset management.

Australian governments, through their social housing agencies, hold some of the largest portfolios of real estate assets in Australia and they face immense challenges in the identification of the correct skills, systems and models of practice to improve service delivery and management of these assets. Presently, public housing stock in Australia is around 333 589 housing units (AIHW 2009) accounting for approximately 5 per cent of total housing stock and 24 per cent of rental housing. In the past two decades, Australia has made various reforms in public housing asset management, but there is still a long way to go in terms of the adoption of good asset management practice. This challenge is not just because of funding constraints, poor design and ageing stock (Arthurson 1998) but because the complexity of the management tasks associated with matching social policy with both demand and supply is so great that there are no quick and easy solutions. There has also been a gradual development of understanding of asset management, which has evolved only slowly from a highly technical focus toward a greater consideration of strategic issues.

Since the 1990s, the aim of the federal government has been to increase the rate of investment in public housing in order to increase the availability of housing services,

as a component of its income support framework. This will provide long-term public benefits and generally requires increased cost-effectiveness.

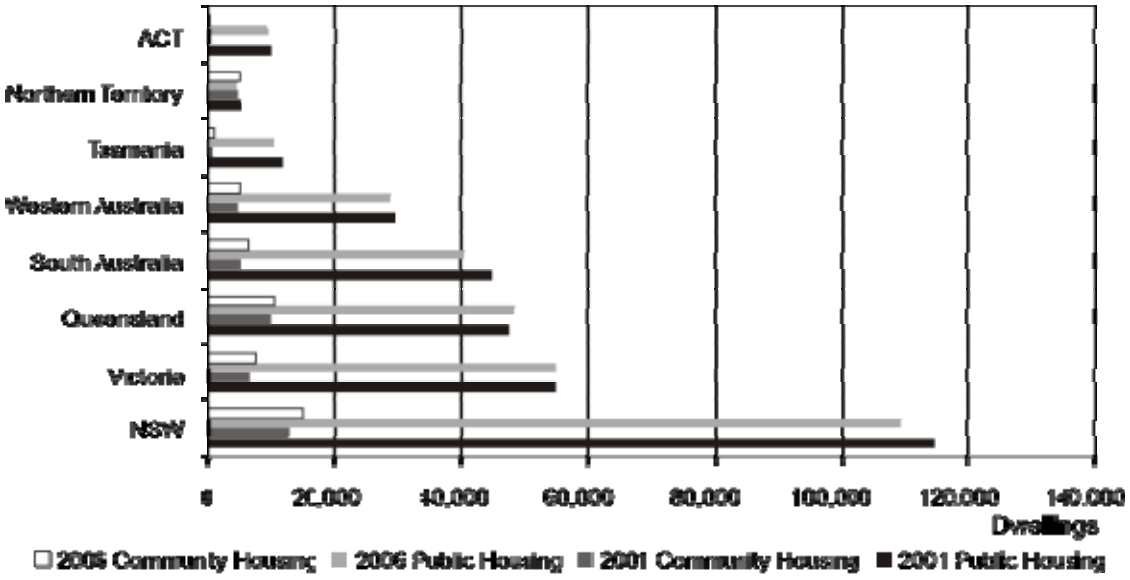
Public housing asset management is a part of this policy and emphasises:

- Disposing surplus assets to free resources for new investment.
- Transferring ownership of assets to the private sector and non-governmental organisations where this secures access to new funding and skills, or transfers risk.
- Identifying and capitalising on hidden assets.
- Increasing value for money from retained assets.

1.2.1 Housing asset characteristics

Figure 2 shows the number and trends in housing stock for all Australian jurisdictions. The quantity, condition and age of housing stock is a major issue for government housing organisations, not only in Australia, but in many other countries that have expanded social housing programs (Meijer & Vijverberg 2004; Straub 2009; Straub & Van Mossel 2005). In the late 1990s some social housing conditions were so bad that no-one wanted to live in them. The problem was that dwellings in some public housing estates were unlettable, mostly because of their age, condition and reputation. In fact, as the national housing stocks are ageing, so maintenance, repair and replacement costs are increasing as resources shrink. Some housing types were unlettable because there was no demand on the housing register for them (Table 1).

Figure 2: Number of occupied public and community dwellings by state and territory



Source: NSW DoH (2007)

Table 1: Commonwealth Social Housing Authority public rental housing summary data (2007/08)

	ACT	*NSW*	*NT*	*QLD*	*SA*	*TAS*	*VIC*	*WA*	*Aust*
Total untenantable dwellings	75	143	92	287	421	89	790	734	2,631
Total tenantable dwellings	10,797	120,046	5,273	50,709	43,189	11,618	64,720	31,514	337,866
Total applications on waiting list	1,859	49,950	3,353	34,696	24,804	3,171	43,467	16,352	177,652

Source: AIHW (2009)

The physical condition, age and extent to which social housing stocks and new housing developments have kept pace with the changing population profile and household structures, is increasingly being contested. New South Wales is the largest provider of public housing compared to other states and territories in Australia. Table 2 shows that the largest loss in public housing from 1996 to 2006 (Figure 2 and Table 2) occurred in South Australia, which had 12 548 fewer public housing dwellings in 2006 than it did in 1996. Of the states and territories, only Victoria and Queensland had a net increase in dwelling numbers between 1996 and 2006 (3258 and 2504, respectively). Caution must be taken with such interpretation of this data as a different data source (Australian Institute of Health and Welfare 2009) suggests that these trends have reversed, with higher numbers reported in 2008.

Table 2: Public housing dwellings by state and territory (1996, 2001 and 2006; +2008)

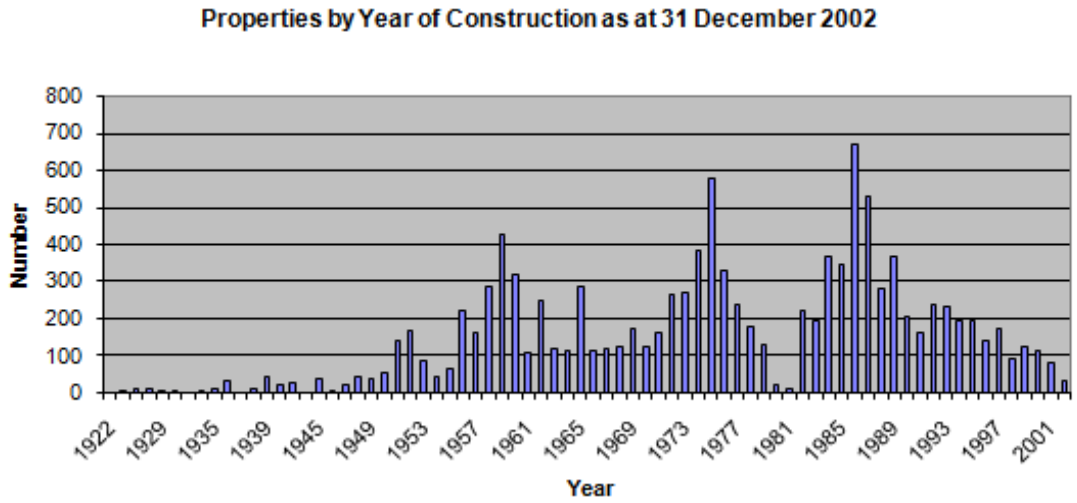
	1996	*2001*	*2006*	*2008*
New South Wales	117,692	114,606	109,494	119,876
Victoria	51,713	55,024	54,971	63,274
Queensland	45,721	47,378	48,225	50,389
South Australia	53,023	44,758	40,475	42,151
Western Australia	30,754	29,457	28,900	30,505
Tasmania	12,406	11,639	10,452	11,526
Northern Territory	7,494	5,307	4,710	5,146
Australia Capital Territory	10,738	9,884	9,310	10,722
Australia	329,830	318,292	306.696	333,589

Source: Atkinson and Jacobs (2008a); (2008) - data is from AIHW (2009)

The performance profiles of dwelling stocks reflect the age and the integrity of the design, pattern and construction materials. For example, the average age of public housing stock in the ACT is approximately 27-years (Figure 3), and as a consequence, age has a major impact on repairs and maintenance requirements. In Tasmania, the average age of the public rental housing stock is around 25-years, while in Western Australia it is 22-years, as is the case in Queensland. Over 44 per cent (approximately 15 550 units) have been constructed since 1989. Old and inappropriate dwellings that no longer suit the needs of tenants have been transferred over the years. Increasing proportions of capital budgets are going into rehabilitation

instead of new construction. In 2006, the Australian national stock of government housing was approximately 307 000 dwellings, of which approximately 65 per cent (259 000) were built before 1980.

Figure 3: Distribution of properties by year of construction for ACT



Source: DHCS (2003)

Burke noted that the absence of appropriate policy intervention and the emergence of spatial concentration of public tenants in disadvantaged areas has a high probability of threatening urban sustainability and affecting Australia's ability to lay claim to having some of the most liveable cities in the world (Burke 2005). Furthermore, the world is facing environmental issues such as climate change and these should figure more significantly in any housing policy discussion. This means that social housing decision-making, including decisions around new construction, must be integrated into a wider urban planning and renewal process.

The age and inappropriateness of much social housing stock has raised questions about what management strategies are to guide maintenance and redevelopment, and also about the failure of past construction and repair programs, given that in some cases the properties being rehabilitated are only a few decades old.

1.2.2 Allocation and strategy to meet changing needs and demand

Currently there is a growing list of demands for housing for all social housing tenures (Table 3). In Australia, there are currently 177 652 people on public housing waiting lists, representing a steady decline since 2003.

Table 3: Total number of applicants on waiting lists, at 30 June 2008

Year	*ACT*	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*VIC*	*WA*	*Aust.*
2003	3471	84 954	1923	32 316	29 557	2740	39 739	13 356	208 056
2004	3730	77 984	1876	35 430	28 565	3229	40 701	12 732	204 247
2005	4119	73 734	2179	38 298	28 430	3116	41 296	12 733	203 905
2006	3600	58 172	2391	37 215	27 925	3387	41 114	13 130	186 934
2007	1870	50 316	2582	36 815	26 201	3055	40 911	14 571	176 321
2008	1859	49 950	3353	34 696	24 804	3171	43 467	16 352	177 652

Source: Roy Morgan Research (2007); (2008) - data is from AIHW (2009)

1.2.3 Asset maintenance and transfer

There have been reforms around the housing asset maintenance service delivery model. Many states have introduced asset improvement programs to reduce the maintenance backlog by improving dwellings in poor condition. Some departments have begun introducing a new approach to maintenance, with new loans to remove the maintenance backlog.

The maintenance reform program is an approach based on five key ideas:

1. Using asset performance to guide intervention.
2. Using component life-cycle planning to formulate forward programs.
3. Optimising a planned and systematic intervention.
4. Pre-empting component failure.
5. Bundling the maintenance work.

In Victoria in the last 10-years, the Office of Housing (OoH) has sold stock needing the most maintenance and replaced it. This has resulted in an improvement of the average age of stock, and in reduced backlog maintenance. However, the level of backlog maintenance has increased since 2000 due to more accurate property condition assessments, more up-to-date costing of work required to bring properties up to standard and mandatory expenditure on items not directly affecting the property condition.

Backlog is often referred to as the work not completed by the due date. It is an organisation policy that it is required to maintain and keep assets in top condition. As in other places, backlog maintenance is a public housing issue for public housing authorities in Australia (AAP 2008). It is infrequently carried out, often due to limited funds. A recent audit report (Auditor General of Victoria 2004) found that while the OoH does not have a funded backlog maintenance strategy, it continues to address backlog maintenance through the development of annual regional stock plans and regional forums to prioritise maintenance requirements. The situation is similar in other states and territories (Koch 2008).

1.2.4 Contrary funding models

The character of the Australian social housing sector has also been formed by 50-years of contrary funding models which have distorted asset management policies and practices between jurisdictions. These typically come in the form of funding models with policy ties which inadvertently prevent *normal* asset management practices. While it was beyond the scope of this study to analyse these funding models, their impact can be seen.

For example, social housing in South Australia is based on the statutory authority of the South Australian Housing Trust (SAHT), which has two separate building programs that use the earnings from sales of its private housings to finance the building of rental homes for low-income people (Stretton 1974; Arthurson 2008), whereas in other states and territories, funding models are based on government objectives.

Presently, there is little literature that focuses specifically on asset management in social and community housing to back-up the asset manager. This study therefore provides the basis for improving the systematic application of good practice in asset management. It explores the themes of good practices for asset management and the principles of strategic asset management and corporate real estate management in the delivery of social housing services in Australia. This allows examination of the

challenges facing asset managers, as well as the factors that are driving policy interest in these issues, and the contemporary approaches to addressing them.

1.3 Aim/purpose

The aim of this project was to develop a set of good practices for strategic asset management which will assist SHAs as they seek to improve housing outcomes for public tenants and to extend the life of their housing stock and maintain its viability and relevance.

Supplementary aims were threefold:

- To scope the attributes of public housing stock and its associated issues.
- To document and discuss the set of characteristics associated with good financial practice applied to public housing asset management in Australia.
- To document and compare the asset management decision-making framework (its principles, drivers and processes) in each of the eight jurisdictions.

1.4 Research questions

This project addresses five research questions, as follows.

1. What are the key financial criteria and issues applying to public housing asset management in Australia? This research question explored:

- The most common and critical financial issues which have arisen in the development and implementation of asset management strategies for public and/or social housing internationally and in Australia.
- The most commonly used financial objectives and performance indicators for asset management in public and community housing, how are they applied, what do they tell us and could they be improved.
- The benefits and costs to public housing providers of current asset management and dwelling maintenance practices.
- The implications of current financial practices for asset management for service delivery effectiveness, for stock flexibility and client harmonisation, for asset preservation and for cost-effective, well-directed maintenance expenditure.
- The financial benefits and costs associated with outsourcing asset management and maintenance.

2. What are the relevant attributes of Australia's public housing stock? This research question explored:

- The attributes that have the most significance on asset management and service delivery.
- The issues and problems that are associated with these attributes.
- The current demands on stock.
- The differences in attributes, if any, between public housing and community housing.

3. How are SHAs dealing with their particular stock issues in each jurisdiction? This research question explored:

- The basis on which they are making their decisions.
- The degree of variation and convergence between approaches.

- The differences in approaches, if any, between public housing and community housing.

4. How well are SHAs implementing asset management strategies and to what extent are they achieving their objectives? This research question explored:

- The performance indicators used to measure success in management strategies.
- Good outcomes, particularly for tenant and landlord stakeholders.
- The differences in strategies, objectives, performance indicators and good outcomes between public housing and community housing.

5. What practices can be discerned from the Australian and overseas experience of asset management? This research question explored:

- Those practices that lead to better overall housing outcomes for tenants (affordability, adequacy, etc.).
- Those practices that lead to better overall housing outcomes for landlords (such as financial outcomes).
- The differences in practices between public housing and community housing.

6. What use is made of corporate real estate practices:

- What level of knowledge is there of modern corporate real estate practices?
- Is there any interest in adopting such practices?
- Is there any potential for improving service delivery in social housing through corporate real estate practices?

1.5 Research methods

1.5.1 Overview

The overall project methodology had five stages to address the research questions. While the research design was broadly intended to address each specific question individually, the interrelationship of the issues meant that information for each question could be drawn from multiple components of the survey. Accordingly, this discussion of the research method will concentrate on the issues being targeted rather than solely following the project stages.

The research questions addressed aspects of public and community housing asset management practices which include the following:

1. International and local context.
2. Housing attributes and stock condition.
3. Financial service practices.
4. Physical service practices.
5. Asset managers' perceptions through focus groups and face-to-face interviews.
6. Corporate real estate (practice) assessment.

Across all the stages and aspects of the research, the following tools were used:

- Literature analysis.
- Survey, questionnaire (mailed and web-based).
- Survey, telephone interview.
- Focus group.

The surveys used in this project did not seek individual's opinions but rather were intended to identify each organisation's view of its own practices, therefore normal attitudes toward response rates and other survey issues did not apply. A multiple source strategy was applied to cross-check and complete survey results as much as possible. The research progressed through the following stages.

Stage 1: Financial dimensions of public housing asset management

Stage 1 was the financial survey and analysis. This was conducted by literature and phone surveys. Stage 1 addressed the key financial criteria and issues applying to public housing asset management in Australia; and therefore:

Stage 2: Scoping public housing and community assets in Australia

Stage 2 provided an overview of the attributes of public housing stock and its associated issues and problems.

Stage 3: Scoping asset management practices

Stage 3 provided the institutional view of its use of practices (from nominated representatives).

Stage 4: Understanding and use

Stage 4 involved focus groups to assess the extent of understanding and implementation of asset management strategies and practices. Stage 4 was used to cross-check and challenge previous findings.

Ethics clearance was granted for the overall study by the Swinburne University Committee on Ethics in Research Involving Humans (reference number: 0708/111).

1.6 Chapter structure

This report includes some, but by no means all, material from an initial position paper (Kenley et al. 2009) as well as material prepared (but not published) as a final report for Stage One of this project – the financial attributes and practices (author: Jon Hall).

The report has been structured according to the asset attributes and management practices, both financial and managerial. As such, it consolidates a variety of research material which was most often complementary but sometimes contradictory.

The report has the following sections:

- This introduction: outlines the context for asset management practices in social housing in Australia.
- Section 2: A brief overview social housing asset management.
- Section 3: A review of strategic objectives for social housing asset management, both international and in Australian jurisdictions.
- Section 4: A report of social housing attributes – their context and their use.
- Section 5: A report of asset management practices in Australian social housing jurisdictions – their context and use.
- Section 6: A discussion of the policy implications.
- Appendices: A to I: Financial methods and results by jurisdiction.

2 SOCIAL HOUSING ASSET MANAGEMENT

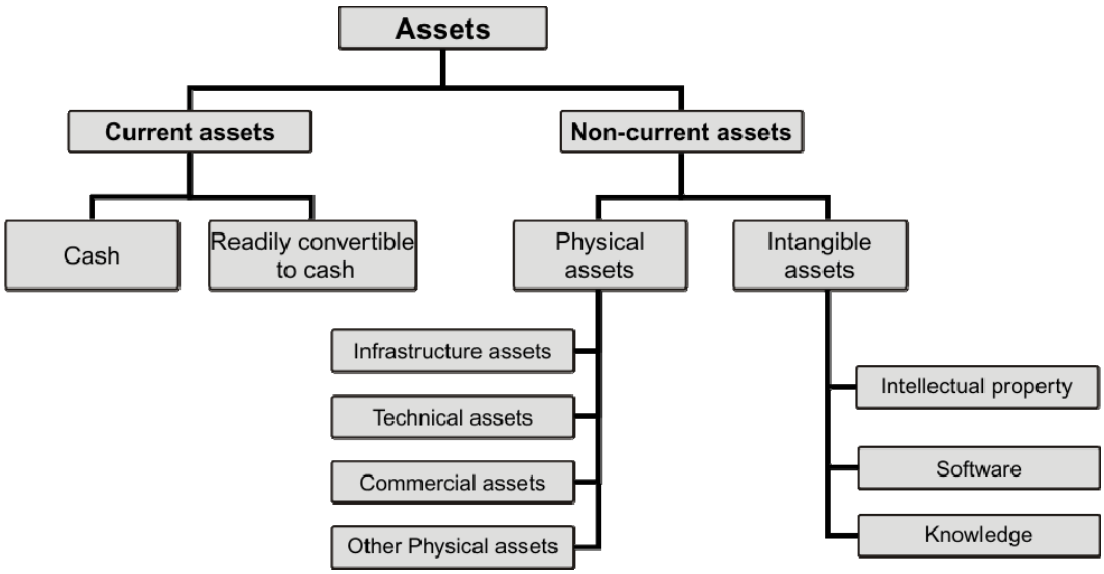
2.1 Asset management overview

The term *asset management* is difficult to accept as a philosophy and implement in practice because it means many things to different people. It is a container term covering the management of asset types as diverse as those shown in Figure 4. As a consequence, the term is easy to use imprecisely. This section explores possible uses before proposing an asset management definition applicable to public housing.

The umbrella term asset management covers many things:

- *Wealth management*, where optimising a person's or entity's range of asset classes, such as cash, equities, bonds and real estate, to maximise the portfolio's value, relative to acceptable risk.
- The (systematic) *management of any physical asset* (or portfolio of assets), for example furniture or a fleet of cars.
- The built environment's
  - *Engineering infrastructure assets* – those that support and facilitate society's functioning.
  - *Property or real estate assets*, for either the private or public sector, that may be technical or commercial assets.

Figure 4: Types of assets



Source: Leong (2004); Koskelo (2005)

However, in property or real estate asset management, there are a plethora of terms that cover the activities and practices involved with managing those assets. Even when a single term is used, there seem to be different definitions for, and understanding of, that term. For example, the term asset management is so widely used, it has been used to refer to the contract administration of project-based housing assistance contracts (for instance, where a public housing organisation transmits to a property its rental subsidies and conducts various reviews/inspections), and also the compliance monitoring of tax-credit projects.

The many terms which cover the domain of asset management of the built environment include:

- Estate management.
- Property management.
- Facility management.
- Portfolio management.
- Service delivery management.
- Strategic asset management.

Estate management is an historical UK usage that emphasises the landlord's ownership of the land and their legal and social relationship to tenants (Deakin, 1999). In this, there is an assumption of a static estate where management tends to be reactive and focused on the physical integrity of the estate's housing stock that make up the estate to meet the landlord's legal and social responsibilities. This constitutes much of what is historically inferred as *asset management*. Larkin's definition of asset management in the context of social housing (Larkin 2000)—'the range of activities undertaken to ensure that the housing stock meets needs and standards now and in the future in the most efficient way'—seems to reflect this notion.

Property management is an evolution to a more dynamic approach that now includes senses of tenant, or occupier, interests (Deakin 1999; Varcoe 2000), although the inclusion of the *profitable* operation of real property shifts the emphasis back to the interests of owner or holders of tenure (leases and the like) (Rondeau et al. 1995). Property management definitions tend to be focused on day-to-day operations that include activities like:

- Maintenance.
- Tenant relations.
- Security.
- Income and cost administration.
- Reporting.
- Leasing (JLW Advisory 1995).

Facility management is the practice of design, documentation, construction and coordination of assets/resources to support the delivery of the organisation's objectives (Alexander 1993). Facility management encompasses the management of the built environment through integrating people, place, process and technology (Alexander et al. 2004; Chotipanich 2004; IFMA 2003).

Portfolio management encompasses the management of a group of properties to achieve value and benefit over and above that derived from management of individual assets (Varcoe 2000).

Service delivery management is the management and administration of resources for delivery of specified services (Varcoe 2000). While this definition is most specifically intended for property services provided by real estate professionals, the term also includes managing services housed in an asset or facility, for instance library services in a library asset. The separation of service and asset management functions as recommended by the Productivity Commission (Industry Commission 1993) clearly reflects this distinction. This view could be extended to include the provision of social housing as a service (accommodation services for public sector housing).

Strategic asset management according to Gruis and Neiboer et al. (2004) combines the principles of (commercial) asset management and strategic planning. Strategic planning is 'the process of developing and maintaining a viable fit between the organisation's objectives and its resources' (Hannagan 1992).

Strategic asset management is interrelated to business planning and forms an evaluation framework for social asset management. The characteristics of strategic asset management are, according to Gruis and Nieboer et al. (2004), market-orientated, systematic, comprehensive and proactive (Table 4).

Table 4: Characteristics of strategic asset management

Characteristics of strategic asset management	***'Indicator' of occurrence***
Market-orientated	Rents, allocations, sales maintenance and renewal are related to tenants' preferences, market demand and financial return/opportunities.
Systematic	Frameworks for decision-making and (structured) planning processes are applied.
Comprehensive	Goals are formulated for the development of the entire housing stock and individual estates are analysed in relation to each other.
Proactive	Investments and other activities anticipate threats and opportunities.

Source: Gruis and Nieboer (2004, p.11)

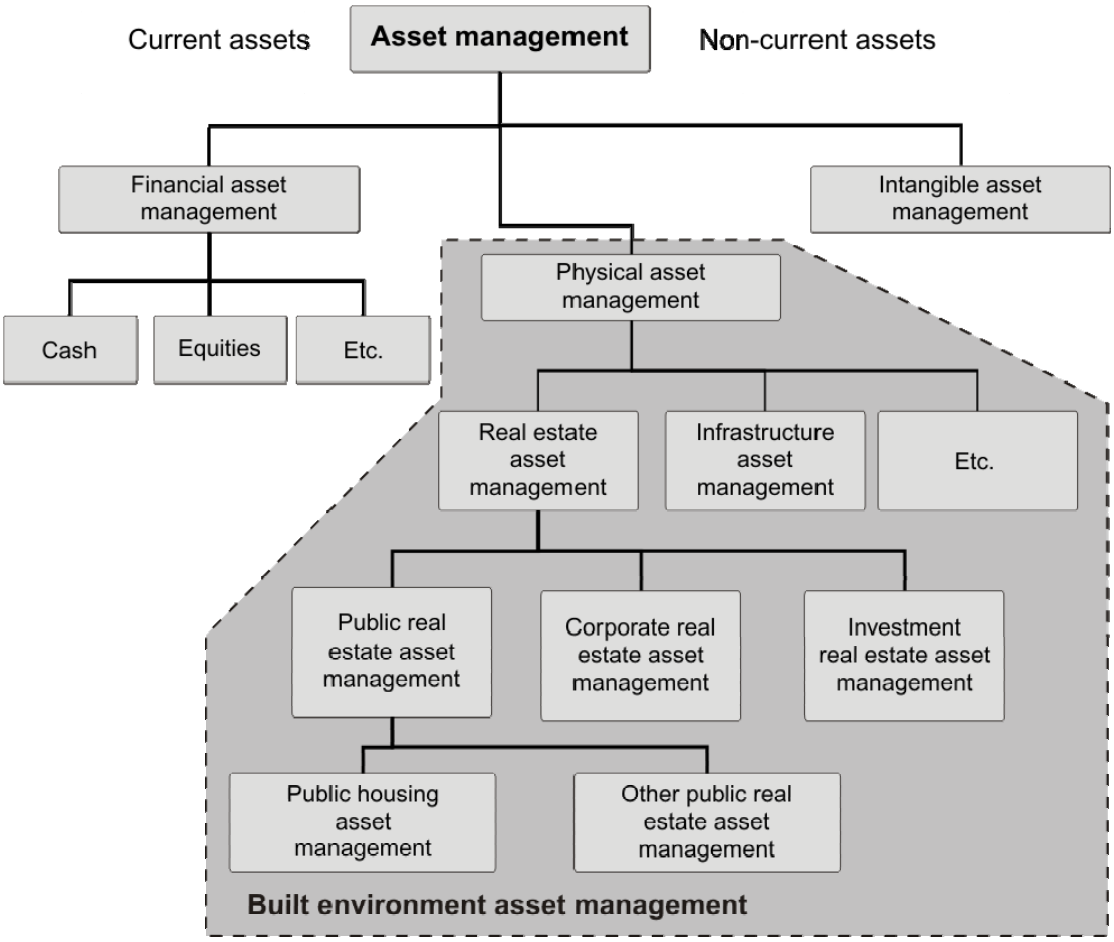
2.2 Real estate asset management overview

In property or *real estate asset management* (REAM), a number of fields can be identified (shown in Figure 5) within the general field of *built environment asset management* (BEAM). Depending on the management context and resultant strategic objectives for assets, general asset management principles can be modified or adapted accordingly. These general principles include a substantial financial element to decision-making and management to achieve benefit from the assets derived from general asset management. This arises because, for many of the above contexts, the benefit is presumed to be maximising financial benefit through capital growth and/or income. This is certainly so within the property and real estate field, where the buying, selling and managing of assets is intended to maximize financial value (Veale, 1989) and is most prevalent in investment real estate asset management. However, in *corporate real estate management* (CREAM or CREM) the benefit for an organisation's *operations* is emphasised (Zeckhauser & Silverman 1983; Brown et al. 1993; Kenley et al. 2000). In *public real estate asset management* (PREAM or PREM) the *social benefits* are emphasised (JLW Advisory 1995; Evers et al. 2002).

Infrastructure asset management (IAM) also has a social benefit dimension, although this is often construed as the most cost-effective achievement of required service levels using a combination of management, engineering, economics, planning and other practices (Obermann et al. 2002; IPWEA 2006). Social benefit is inferred in correctly specifying the appropriate service levels.

While asset management is extremely useful to investment real estate, it is just as useful for CREM and PREM organisations. Where the real estate assets are managed for operational purposes, such as is the case with public housing, then the CREM field, potentially, has useful insights to be applied, especially as recent thinking in the field has emphasised both strategic and business outcomes.

Figure 5: Fields of asset management and built environment asset management



Real estate asset management (REAM) includes considerations of the maintenance of the physical and operational integrity of the asset to ensure continuing value – financially and operationally (Rondeau et al. 1995; Varcoe 2000). This issue, while always important, had achieved considerable prominence in the 1990s, in what can only be described as an explosion of interest across both the public and private sectors.

One of the simplest outlines of real estate asset management comes from the Australian National Audit Office (1996) which posits five principles.

1. Asset management decisions for acquisition or replacement, use, maintenance, and disposal are integrated with organisational strategic planning.
2. Asset planning techniques are based on an evaluation of non-asset alternatives to the acquisition of new assets and which consider the *life-cycle* costs, benefits and risks of ownership.
3. Accountability is established for asset condition, use and performance. This includes identifying those responsible for the asset, establishing performance standards for condition, operations and maintenance, and documenting resources required to achieve these standards.
4. Disposal decisions are based on analysis of the methods which achieve the best available net return within a framework of review of surplus, obsolete, underperforming and unserviceable assets. Any disposal plans are to take into

consideration both the state of the market into which the asset is being disposed, and the condition of the asset.

5. An effective internal asset management control structure is established that includes asset registers, information and staffing practices. While this principle is most evident in terms of the asset management function itself, it can also include *plans* established under each of the other principles.

Similarly, BOMA (the Australian Building Owners and Managers Association) considers real estate asset management as involving the planning and implementation of property investment and management strategies via (JLW Advisory 1995, p.1):

- Developing investment objectives.
- Research and asset allocation.
- Development of investment policy and strategy.
- Risk management.
- Acquisition/disposal management.
- Re-positioning and adding value to existing assets.
- Ensuring the efficient delivery of property related services across a portfolio or at the single asset level.
- Performance measurement at the property and portfolio level.

While such encapsulations of practice still inform conceptualisations of real estate asset management to this day, they fail to produce a clear, comprehensive framework for public housing asset management. Nevertheless, several key principles emerge:

- The existence of asset management plans and policies.
- Risk assessment.
- Life-cycle approaches to assets, including calculating life-cycle costs, usually expressed in net present value (NPV) terms at acquisition (and presumably at disposal).
- Acquisition, redevelopment and disposal in accordance with organisational (strategic) needs.
- Information requirements including:
  - Asset registers.
  - Condition levels.
- Performance assessment including:
  - Setting performance standards.
  - Determination of functionality levels.
  - Cost-benefits analysis for decision-making.
  - Review of asset performance at individual and portfolio levels.
  - Investment return (other than cost-benefit analysis).
- Relationship of asset management to organisational needs.
- Existing assets repositioned, that is, redeveloped and enhanced in value, both in-use and financially.

2.3 Public sector housing asset management

The term *social housing asset management* has come into common usage internationally and in Australia during the 1990s. Priemus et al. (1999), defines social housing management as 'the set of all activities to produce and allocate services from the existing social housing stock'. According to them, housing management consists of a variety of activities, categorised as *technical management* (maintenance, renovation, etc.), *social management* (housing allocation, etc.), *financial management* (treasury, rent policy) and *tenure management* (letting, buying, selling) (p.212). However, public housing asset management, seems to be clear in its focus on the physical housing stock, and includes activities in the four categories mentioned, but excludes activities not affecting housing stock characteristics. The main activities concern rent policy, acquisitions, maintenance, renewal and sale allocation.

As Gruis and Nieboer (2004b) have observed, asset management is a relatively new concept for public housing managers. It straddles both private and public sector management methodologies, stemming from 'the private sector where it is concerned with an analysis of the performance of an organisation's assets in support of decisions about holding, selling and repositioning. In private sector asset management, however, the emphasis is on optimising financial performance. In the public rented sector, it is not necessarily – or mostly not – the primary criteria for management decisions', (p.5). The key question for public housing managers is how to reach their social housing objectives efficiently. It is also interesting to note Larkin's (2000) definition of asset management in the context of social housing as 'the range of activities undertaken to ensure that the housing stock meets needs and standards now and in the future in the most efficient way.'

Within commercial real estate management, the distinction is made between portfolio, asset and property management. Portfolio management concerns the allocation of resources to several investment categories and is not applicable to public housing where investments are restricted to dwellings. One of the basic components of asset management is to take a strategic view of asset retention and exploitation, as well as to identify those which should be disposed of to generate reinvestment (Lyons 2004).

Public housing in Australia constitutes several varied activities undertaken by an array of participants, classified as tenants, public housing organisations, private housing organisations, asset managers, governments, citizen advocates and so on. In the realm of government, which is the major stakeholder of public and community housing, social housing policies, objectives and asset management activities are best understood in the context of changing developments in the political and economic environment.

One of the core objectives of social housing is to ensure that all applicants have access to housing that is adequate, equitable and appropriate. Currently, the policy context for social housing management is driven by a combination of market competition and government regulations through various housing organisations. The Commonwealth government has implemented a range of measures that encourage and require the adoption of good asset management practice (in particular development of strategic plans, a national asset register and a resource accounting and budgeting framework). More recently, the government has introduced its *Social Housing Initiative*—part of the *Nation Building–Economic Stimulus Plan*—which targets increased provision through new capital works. Moreover, there has been variability in the application of asset management and strategic asset management in the public sector (Brackertz & Kenley 2002a; Ming Yu & Han 2001).

3 STRATEGIC OBJECTIVES FOR SOCIAL HOUSING ASSET MANAGEMENT

This section provides an historical context and principles of social housing asset management in Australia and OECD countries. There is more attention paid to social housing asset management experience from Europe because of the similarities to Australia and the large number of social housing services available compared with the USA, where housing policies are designed to encourage home ownership.

3.1 International context

Any reference to international literature on reform of public housing asset management should note the narrative by Jencks (1978). Jencks reported on the demise of public housing in relation to architectural practice and housing quality in the USA. In addition, Veale (1989) and colleagues in 1987 at the Massachusetts Institute of Technology, USA investigated the concerns, priorities and attitudes of asset managers in regard to private and market-oriented real estate assets following the introduction of corporate real estate models in USA organisations. Similarly, Simons (1993) carried out a survey of asset management to examine the effects of the adoption of corporate asset management practices in public organisations in Cleveland, USA. The study examined five corporate factors, including management functions, performance evaluation, property asset management, effectiveness of property managers, accounting information systems, decision-making, property inventory, acquisition and disposal decisions. The study then made a comparison between private and public asset management, and found that decision frameworks for property asset information are inadequate, under-managed and ineffective in public corporations compared to private property organisations.

Veale and Simons remind us how asset information, performance evaluation and accounting practices can affect the quality of decision-making about housing assets. The study also provided researchers and property managers with a new analytical concept of ‘asset performance’, as well as setting off a more general debate about the role of ‘real estate executives’ as guardians of strategic property assets. Other researchers that built on this literature, specifically in terms of asset management, include those of Pittman and Parker (1989), Gale and Case (1989) and Redman and Tanner (1991).

Before turning to contemporary literature, some general observations can be made about the broad direction of asset management and social housing reform. North American and European countries have in broad terms, a strong sense of the business roles of housing management. One of the major catalysts in the United States of America (USA) was the adoption of the business model and the exclusion of municipal government from core housing management in favour of tenant and housing associations. With its capacity to provide an element of customer choice, the idea meshed in principle with market-oriented notions of consumer choice popular in the USA. The business model is attracting considerable interest in the Netherlands, New Zealand, Australia and United Kingdom, where a number of academics and housing organisations began to explore the potential of customer choice in housing asset management.

In recent years, social housing delivery and asset management (Sanderson 2001) have attracted much attention in the literature, both in terms of the quality, performance standards set and the mechanisms for planning and implementing asset improvements (Bovaird & Loffler 2002). However, almost all papers that have been

published in academic journals focus on housing delivery and constraints in Europe, Australia and New Zealand (Gruis & Nieboer 2007). As a consequence, relatively little is known about good practices for asset management of public housing in an empirical and general context.

To explain asset management in the public housing market, this report now considers the published nature of practices in different countries, and in particular the idiosyncratic way asset management systems have become concentrated.

3.2 Europe

There is no single *European model* to which social housing organisations in Europe can aspire, because social housing providers in European Union countries have operated much more on the basis of their own *country-specific* models rather than seeking a generic model to sustain their programs and operations. Indeed, in some European countries, there appears to be little in the way of social housing asset management systems (Norris & Connell 2002). Research has identified the strongest support for the social housing rental sector is in the Netherlands (Gruis & Nieboer 2004b), where it represents 40 per cent of the total national housing stock (Boelhouwer et al. 1997), and accounts for one-third of the social housing sector of Europe (Norris & Connell 2002).

Private finance is an important source of financial support for social housing organisations in most European countries, with the exception of France (Stephens et al. 2002). Also, intermediary financial agencies are used in several states to enable finance to be accessed at preferential rates.

3.2.1 United Kingdom

The UK provides an interesting case as it has been a leading light in social housing management and is unusual in decentralising the ownership, provision and management of social housing by local government to housing associations (Stephens et al. 2002). The primary objective of the UK government regarding social and public housing is that every citizen should have the opportunity of a decent home at an affordable price, in sustainable communities and where they want to live and work. The government has housing strategies at national, regional and local levels. The *Housing Act* of 1988 was the major catalyst that changed housing management practices in the UK. In the *Housing Act* local governments were no longer allowed to provide and manage social housing but were expected to become facilitators (Pryke & Whitehead 1995; Whitehead 1999). Housing associations were to become the new providers and were encouraged to do so through a range of initiatives (Williams et al. 1999).

Furthermore, the UK government responded to the physical crisis of public housing with a series of reform programs (Malpass & Mullins 2002). The national action plans and strategies included:

- Construction of more new homes to balance housing supply and demand.
- Creation of new home-ownership schemes that give greater choice and opportunity to first-time buyers, social tenants, key workers and people who rent privately.
- All social housing will meet the decent homes standard.
- Home information packs will make it easier to buy and sell a home.
- Minimizing and halving the numbers of homeless households in temporary accommodation.

- Reforming the housing market renewal program in areas where deprivation is significant.
- Developing a *Supporting People Programme* to help vulnerable people improve their quality of life.

In 2000 the British government set itself a *Public Service Agreement* target of bringing all social housing up to the Decent Home Standard (DHS) by 2010 (Meijer & Vijverberg 2004). The DHS is a dwelling quality instrument, which sets a minimal quality level. In 2002 this target was broadened to encompass also 70 per cent of dwellings in the private sector occupied by vulnerable households (ODPM 2004).

In Britain, local governments and housing associations operate within different statutory, regulatory and funding frameworks. In addition, local governments set out their policies and strategies for delivering their housing plans such as:

- Effective provision of sufficient quantities of good quality housing in the right places.
- Housing and Planning Delivery Grant.
- Housing development framework.
- Estate and tenancy management.
- Rent collection and management of rent arrears.
- Repairs and maintenance service.
- Tackling anti-social behavior.
- Allocations and lettings policy.
- Making effective use of housing stock through tackling over-crowding and under-occupation, requests for transfers and management of voids.
- Tenant rights, involvement and consultation.

3.2.2 The Netherlands

In the Netherlands, owner-occupied housing currently dominate the housing market, controlling about 56 per cent of the stock (Thomsen & Van der Fliers 2007). The social rental housing sector accounts for 35 per cent of the total housing stock (Priemus et al 1999; Elsinga et al 2009), while the rest (about 9%) is provided on a commercial basis by private and institutional landlords (Kemeny et al. 2005). Until recently, local government also managed part of the social housing sector. The housing associations were privatised in the mid-1990s and local governments were given a supervisory role. The physical and environmental quality of the Dutch social housing stock and living environment was measured periodically (i.e. every 5–6-years) in a Qualitative Housing Survey (KWR) (Meijer & Vijverberg 2004). The last comprehensive investigation was carried out in 2000. The KWR focuses on the structural condition of the building, the functional quality, energy-efficiency, security facilities and the spatial quality of the living environment.

According to Meijer and Vijverberg (2004), the quality of the UK housing stock is measured in the English Housing Condition Surveys. Like the KWR, the measurements are made periodically. Both Britain and the Netherlands have various instruments that regulate the quality of existing dwellings. The most important are:

- Building regulations that set minimum quality standards.
- Enforcement options for local authorities when health and safety is threatened.
- Legal repair duties of landlords.

Besides these regulations, whereas Britain has set a minimal quality level in the Decent Home Standard, the Netherlands do not have such a regulatory quality instrument.

3.2.3 Sweden

The literature about public housing in Sweden is more about policy and regulation than practice (Turner 1999). In Sweden, the primary providers of public housing are companies or cooperative institutions often run by a municipal government (van der Heijden 2002). Lundqvist (1988) discussed the role of the private sector in public housing. He noted that municipal government had employed private companies and recorded great success in the management of public housing. Although this was incompatible with national policy, privatisation gave rise to the advent of tenant and housing associations.

More generally perhaps, the most important lesson—not only from the Swedish experience but with evidence from international comparisons—is that subsidy and tax systems have modified the new construction and management of social housing.

3.2.4 Ireland

The government of Ireland introduced the Strategic Management Initiative (SMI) in the 1990s as a reform program for the social housing sector (Norris & Connell 2002). The objectives for the housing management program included strategic management and planning and tenant participation. Housing management characteristics include tenant purchase schemes and tenant participation models.

A study by Redmund and Walker (a section in Mawson et al. 1995, pp.312–316) found that in Ireland, social housing asset documents are largely descriptive rather than analytical in that they summarise the key features of the service rather than identifying their gains and shortcomings. Also, the plans they proposed for improving service quality are lacking in detail, and are largely aspirational, with scant consideration of how the proposed reforms are to be achieved (Walker 2001). They also observed that the statements lacked understanding of the degree of tenant involvement necessary for housing improvement and display a striking absence of adequate data and information systems necessary for effective performance monitoring. Examples of good practices in local government were identified and explained.

3.2.5 Eastern Europe

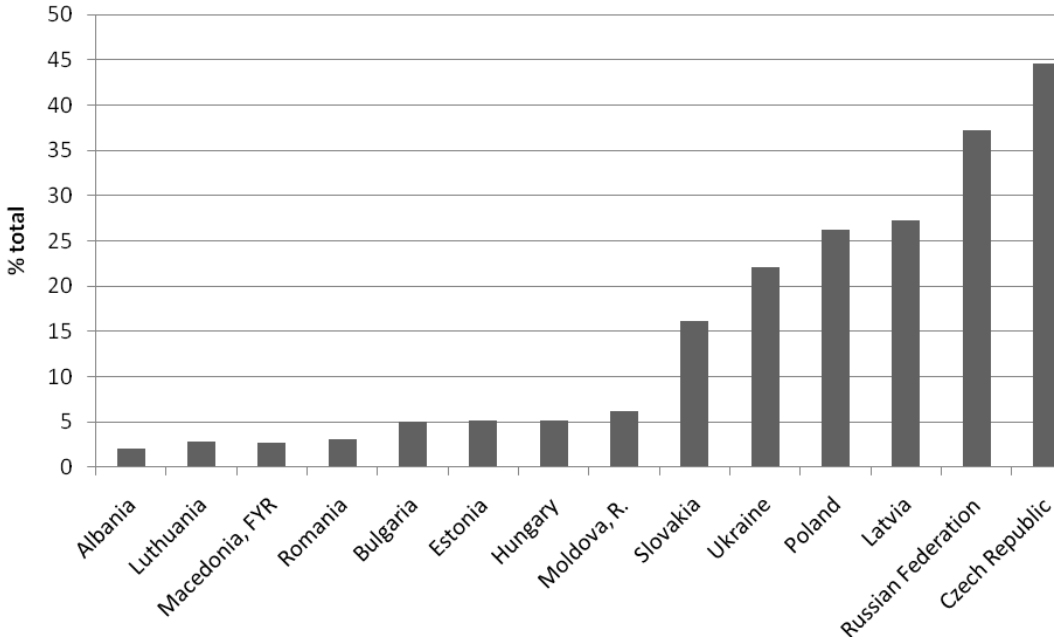
Countries of Eastern Europe (Figure 6) have chosen divergent strategies; some address the housing needs of the low-income segments, while others address a mix of income groups where non-profit providers compete with profit providers in the social rental housing sector (Tsenkova & Turner 2004).

3.3 North America

3.3.1 USA

The United States government has also faced severe challenges in asset management of social housing; some of these challenges are similar to those in many OECD countries, yet greater attention is given to the financial and management performance of public housing projects. Recently, many US housing agencies have embraced the asset management decision-making framework to help them highlight both the significance of public housing infrastructure as an investment and the cost-effectiveness of systematic condition- and performance-monitoring and maintenance programs.

Figure 6: Social housing in Eastern Europe in 2001 as a percent of total housing stock



Source: Tsenkova and Turner (2004)

A public housing operating cost study, published in 2003 by the Department of Housing and Urban Development, sets out a financial model for public housing in the USA. The report, which was based on a cost-management framework by the Harvard Graduate School of Design, proposed the benchmarking of public housing infrastructure development based on a federal housing administration inventory (Harvard University Graduate School of Design, 2003). Other factors often employed in asset management evaluation include: physical condition (age and quality); social (occupants, wait list); financial (rent, sale, loans); system (technology); and personnel assessment (staff) (Batko & Diggs 1996).

3.3.2 Canada

In Canada, shrinking state and provincial housing services have struggled to maintain a vision and scale for asset management best practice. It is only in the last few years that some states have broken out of a decade of declining social rental provision and begun to develop policy approaches with mixed tenures. In fact, published best practice initiatives are still in the early stages, often in an experimental or pilot model (Policy Research Initiative 2003).

3.4 New Zealand

Just like Australia, a key challenge for the Housing New Zealand Corporation is that much of the rental housing built in the post-war era for predominantly nuclear families is now old and ill-suited for tenants currently on the waiting list (Dodson 2007). Following the public service reform and rationalisation of state property asset management in the 1990s (Dow et al. 2006), Housing New Zealand Corporation was split into two entities: Housing Corporation of New Zealand (HNZC) and Housing New Zealand (HNZ). Housing Corporation of New Zealand is responsible for a portfolio of residential loans and the management of the government's surplus land assets, while HNZ manages the Government's rental stock. In addition, HNZC introduced an asset management framework to assist programs such as precinct planning, life-cycle

modelling and information management systems. This is being driven by Treasury, which is dictating an asset management framework for the public sector.

3.5 Australian jurisdictions

Until recently, few records of public housing asset conditions and practices have existed in Australia. Despite this, Australian governments at all levels have been recording and reporting assets since the 1990s as a means of knowing the true status of their assets and as required by the then new AAS27 accounting standards (Shah et al. 2004). This has resulted in the demand for large-scale data capture and tools for asset management. However, there currently is a dearth of literature about good practice for public housing asset management in Australia.

While some authors have considered the Australian experience in the context of comparative studies, involving Australia and Europe (e.g. Gruis & Nieboer 2004a) and Australia in the context of developed and developing countries (Conway, cited in Kaganova & McKellar 2006, pp.25–248) few have specifically reviewed the current status of social housing asset management and policy responses in Australia. This is not entirely surprising given the relatively new emphasis placed on this aspect of asset management by government housing organisations. However, there is substantial experience in social housing development initiatives in Australia going back to the 1950s and a body of literature that has developed from this. Much of asset management best practice appears to be within the transportation and engineering infrastructure fields rather than in housing (e.g. IPWEA 2006).

Nevertheless, an emerging objective for most public housing reforms currently being implemented in Australia is to review public housing asset management practices, their wider performance impact and to develop new policies for the future. While much of the valuable investment in social housing has been to improve dwelling stocks and diversity through strategic management, there has been a distinctive move toward improving the practice of asset management in the housing reform process.

Meanwhile, state housing authorities in Australia are presently initiating strategic asset management plans including stock transfer, financial modelling, disposal, contract management and construction of public housing to manage all of their social housing assets, which are linked to other management systems that support the agency's overall business processes. Many states have systems that manage or simply store data on selected categories of social housing features. More recent proposals included asset management reform in the policy package, with social, technological and operational programs complementing physical maintenance activity.

For example, the New South Wales Department of Housing (DoH) is implementing new programs to improve the management of its social housing assets, including assessing backlog maintenance and carrying out performance reviews. Separate asset registers are held according to function, such as asset transactions, property asset surveys, IT and public buildings. Although a new asset management system to support asset management has been introduced, this continues to run in parallel with the old system (NSW Department of Housing 2007). Further improvements are planned including the development and implementation of a repair and maintenance strategy, improvements to asset management information and a comprehensive plan to address the level of backlog maintenance.

Public housing asset management in Queensland is now being managed as part of an overall strategic plan (Queensland Building Information System 2009). Risks are identified as part of the service planning and decision-making processes. Some of the new structures regarding asset management of social housing include the following.

Housing registration: a housing register is maintained and risk management is well embedded in many housing projects. Registration of housing providers is intended to maintain high levels of service delivery. Registration of housing providers is the responsibility of the registrar of housing in the state of Queensland registration is mandatory but it is at an early stage of implementation.

Information technology is being used effectively to improve housing capacity. Many states have an ambitious program of major system replacement to improve organisational effectiveness. Technology has been used to improve efficiency and customer access at the customer service centre where efficiency savings have been achieved alongside improved performance through web-based transactions and speech server technology.

Performance management is adequate. The states have traditionally been strong in managing performance within their directorates and this has resulted in good overall performance in service areas. However, there have been long-standing weaknesses in their overall corporate arrangements. They have recently improved these arrangements but they have yet to become an established part of each organisation's business management processes. Similarly, performance management for key partnerships have improved but there are still inconsistencies in arrangements.

Corporate performance management is developing. While there is generally good performance and improvements in a number of priority areas, the corporate performance management framework has yet to drive improvement in a consistent way across all areas. Some states have sustained good performance in services for ageing dwellings (assets) and there are good examples of performance improvement in recycling and planning performance.

A review of state and Commonwealth framework and strategies, drawn from a range of documents and reports (SGS Economics and Planning Pty 2009), gives a clear indication of the current emphasis on asset management of social housing (refer to Table 5). This applies equally to asset forecast, acquisition, disposal, and maintenance in urban, rural and regional contexts. The amount of activity has varied by state. For example, in New South Wales, the current Housing Maintenance Reform Program is the responsibility of the DoH, but Aboriginal housing is supervised by the Aboriginal Housing Office introduced as a component of NSW's aboriginal housing improvement strategy. The responsibility for backlog maintenance and reform initiatives may be taken by different departments, or a central unit. While there is a growing emphasis on *whole of government* responses, there have been varying degrees of inter-departmental co-ordination.

The strategies employed by housing departments have been very diverse, ranging from asset-based approaches involving acquisition, disposal, sales and physical improvements of the housing stock, through to alternative forms of housing management. The relative emphasis placed on these different elements has varied; some have been more asset-based and others more socially oriented. The trend both in Australia and overseas has been toward holistic solutions with a greater emphasis on cross-departmental collaboration (Dodson 2006).

Like other countries, Australia faces an ageing housing stock, not only in government housing but in other areas of housing and infrastructure, including elderly persons' housing managed by local government and non-governmental organisations. Some of this stock is now up to half a century old, just as in New Zealand, where much of the stock managed by local councils, primarily for the elderly, is in a similar condition. What management practices caused assets to be uncared for, and how can the mistakes be prevented? More and more international evidence is beginning to

document that as many asset management problems derive from mistakes in tenant management, including allocations, as they do from design, construction or maintenance issues.

In predominantly asset-based approaches, the focus has been on investment in the physical asset-housing improvements and environmental work often rectifying design defects and addressing safety and security issues. A major strand in this approach has been the re-modelling of estates through demolition, transfers, sales and redevelopment. This has often been combined with the development of more localised management structures which aim to be more responsive to the asset condition and therefore reduce turnover and improve asset performance. These improvements are also geared toward reducing tenant dissatisfaction (Randolph & Judd 2000).

Current reports note that the condition of public housing stock continues to deteriorate due to years of poor maintenance, and an inability to track project expenditures and conditions. In addition, data collected by the state housing authorities is not balanced from year to year and cannot be identified with particular jurisdictions to a sufficient degree. Consequently, while the following review focuses on the programs of the state housing authorities, reference is also made to recent audit reports and recommendations that operate alongside the housing programs. The following review is necessarily constrained by the documentation that the project team were able to collect from state housing authorities in the time available. The coverage has been variable, with some states able to provide a greater range of material than others.

Table 5: Characteristics of asset management systems by states/territories

	ACT	*NSW*	*NT*	*QLD*	*SA*	*TAS*	*VIC*	*WA*
Reform proposals								
Strategic asset management plan	✓	✓		✓	✓	✓		✓
Capital investments strategic plan		✓		✓	✓			
Maintenance strategic plan		✓		✓				
Asset disposal strategic plan		✓				✓		✓
Obligation to comply with Treasury/Finance AM guidelines		✓	✓		✓	✓		✓
Are you obligated to comply fully?		✓	✓	✓		✓		✓
Have you identified the asset mix?		✓						✓
Tools and techniques								
Do you use probability analysis techniques for strategic asset analysis?								
Do you undertake demand management analysis?		✓	✓	✓				✓
Asset management practices								
Do you have a dwelling condition assessment program?		✓		✓	✓	✓		✓
Do you have or are developing a life-cycle costing program for your housing assets?		✓		✓	✓	✓		

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Have you applied value management principles to housing maintenance process?		✓			✓	✓		
Do you outsource your maintenance management?		✓	✓		✓	✓		
Have you embarked on a major asset restoration program?		✓	✓			✓		✓
If you haven't, do you believe you need to undertake a major asset restoration?			✓		✓			
Have you undertaken any income stream analysis of your housing portfolio?								
Do you assess the economic loss on your dwellings?			✓		✓			
Do you use economic loss as a tool in asset disposal decisions?								
Do you analyse the cost of different levels of asset effectiveness?					✓			

Note: ✓ = present, blank = no response or no data

3.5.1 Australia Capital Territory (ACT)

There is an established social housing program in the ACT but information is limited about asset conditions and organisational reforms in public housing. The ACT support the development of an asset management strategy for public housing assets and the government's Commonwealth State Housing Agreement: the Annual Report of the Department of Disability, Housing and Community Services refers to 'Public Housing Asset Management Strategy for the consolidation and growth of a viable and flexible social housing system that balance tenants' need for security of tenure against the need to rejuvenate the asset base'. Approximately 9.5 per cent (11 400) of all ACT residential dwellings are public housing properties in a diverse range. In 1999, public housing asset management was adopted in the establishment of a *Multi-Unit Property Plan* for the funding, maintenance, refurbishing, condition assessment and disposal of ageing stocks.

Aims

- To maintain the level of housing stock.
- To strategically manage the public housing portfolio for the ACT government, including acquisitions, disposals and refurbishment of properties to align the portfolio with changing social structures and tenant and prospective tenant needs, and responding to environmental standards particularly in the areas of energy and water efficiency.

Principles

1. The public housing portfolio will be aligned to ensure the stock is well-located across the city, and in areas with good access to public transport, employment, education and services.
2. Public housing will contribute to the creation of sustainable communities by better integration within the surrounding neighbourhoods, promotion of mixed ownership,

and incorporation of high-quality design features to minimise environmental impacts.

3. There will be sufficient flexibility of stock to respond to ongoing and emerging social housing needs, including provision for clients with special needs.
4. The portfolio will be maintained to agreed condition standards to ensure appropriate amenity and safety for tenants and to preserve the value of the assets.
5. The public housing system will be managed efficiently and cost-effectively, providing best value to the government.

3.5.2 New South Wales

There has been a notable effort to improve asset management and the quality of housing to tenants through asset reforms. The New South Wales Department of Housing (DoH) introduced Total Asset Management Software (New South Wales Treasury (Office of Financial Management), 2004) and spatial decision support systems (Barton et al. 2004) in the early 1990s. Total Asset Management Software (TAMS) is an asset register and management tool that incorporates a whole-life approach to asset management for construction, maintenance and operation of assets, including buildings. A recent audit report (2005) showed that NSW has the largest stock of public housing in Australia (Auditor General of NSW 2005). In 2003, NSW initiated a series of public housing Asset Management Reviews. One of the major outcomes of these reviews was the conception of the Maintenance Reform Program (MRP). The purpose of the review was to move asset management from predominantly responsive maintenance to planned and systematic maintenance. It is aimed at pre-emptive failure, reduction and removal of the backlog maintenance of housing assets. It is currently being implemented in three phases at different locations in the state. Its primary objectives are to:

- → Bring all properties to a consistent and sustainable standard.
- → Reduce the number of responsive maintenance requests.
- → Improve client satisfaction.
- → Improve management of tenant damage.
- → Improve contractor performance.

A Property Assessment Survey (PAS) was introduced into the public housing asset plan in 2003. It is aimed at the assessment of repairs and to schedule maintenance works. The Department of Housing has used the data on asset components to build predictive models of its asset portfolio.

The Asset Dwelling Service (ADS) is a component of the MRP, linked to the idea of regular repairs and maintenance. It involves carrying out minor repairs on every public housing dwelling to keep homes in good working condition. The services include repairs to kitchens, shower recesses and hot water services, as well as safety items such as smoke alarms and electrical systems.

3.5.3 Northern Territory

There is comparatively little available information pertaining to asset management practices in the Northern Territory and there are only limited references to government proposals and *consultation initiatives* in the Territory Housing newsletter and annual reports (Territory Housing 2007). Some examples of government initiatives include maintenance and priority housing programs for people who cannot afford private rental housing.

Aim

Territory Housing is committed to providing safe, secure and affordable housing for all Territorians.

Principles

Strategic stock management can more easily be understood in terms of its guiding principles, which are:

- Providing homes that are safe and secure.
- Providing homes that meet client needs.
- Making sure that dwellings are appropriate to the environment.
- Having a standard level of amenity.
- Ensuring there is a diverse mix of housing tenures and social backgrounds within a community.

3.5.4 Queensland

Asset management reform initiatives were introduced in Queensland in 1995 as a component of the state government's housing strategy (QGDoH 2007). The public housing stock consists of approximately 50 000 dwellings; however, it is facing financial difficulties due to competing demands to maintain existing stocks and obtain additional stock to address growing demand. Building on reforms to date, Queensland has introduced broad-based asset management practices, tools and frameworks. An example of an asset management system is the maintenance management framework (MMF) for planning and management of projects. Another example is the strategic asset management guidelines, which assist in project improvement, refurbishment and disposal (Shah et al. 2004).

A review of strategic plans indicates the following.

Objectives

- Manage the social housing portfolio to maximise the organisation's ability to meet present and future needs of clients.
- Maintain a consistent, high standard of asset management practices across the organisation and ensure value-for-money outcomes.
- Assist community organisations to achieve a high standard in assert management for social housing.

Principles

- Include the entire department's social rental housing programs, taking into consideration individual program priorities, policies and processes.
- Achieve value for money and optimise the useful life of assets.
- Be integrated with departmental budgetary and reporting processes.
- Contribute to improving the social and economic diversity of communities.
- Minimise the negative impact on the environment in line with the department's quality and environmental principles.

3.5.5 South Australia

From the late 1980s onwards there has been a growing focus on housing regeneration in South Australia. As with New South Wales, the Department of Families and Communities has responsibility for public housing management. In 2001,

South Australia introduced the Asset Condition Database management system. The purpose of the program is to collect asset data and help to inform project managers about asset-planning and decision-making to deliver improved and efficient services. Recently, a *Housing Plan* for South Australia was released that sought to position public housing on a more sustainable footing, by engaging the private sector in the development and supply of affordable and high-need housing for low-income households (Department of Families and Communities 2008).

Aim

- To manage the state's housing assets to meet the on-going needs of the community.

Principles

- Asset management supports financial viability.
- Asset management contributes to successful tenancies and sustainable communities.
- Trust properties meet the needs of customers.
- Assets are maintained and their value protected.
- Asset decisions are informed and coordinated.

Issues

- Declining government funding is a major factor with wide ramifications for the organisation and the state in providing public housing. To compensate for the shortfall in funding it has been necessary to sell public houses to subsidise essential capital programs. This has led to a decline in the total number of houses available for South Australians in need. There is now an imperative to establish a sustainable number and profile of public houses for South Australia so that further stock losses can be curtailed.
- Greater levels of financial hardship (93% of new tenants in 2001/02 were eligible for a rental rebate due to low income) Reduced income from rents and grants restricts the scope of capital programs that can be undertaken.
- Some communities have high concentrations of identifiable Trust houses on large sites. This can lead to narrow social mix within communities.
- There are a reducing number of public housing opportunities in areas of high demand. A changing profile of our customer base is due to targeting housing services to those most in need. Demographic movements and economic decline have resulted in an oversupply of housing in some country centres. At the same time reduction in available vacancies, especially in the metropolitan area has the potential to lead to long waiting times for those requiring housing assistance.
- Household composition is not always supported by existing housing stock.
- There is increasing numbers of aged tenants who prefer to age in place. The age profile of Trust stock indicates that in 2002, approximately 40 per cent of housing stock is over 30-years-old, resulting in rising maintenance costs as well as housing which may not always match contemporary needs and expectations.

3.5.6 Tasmania

The Auditor-General highlighted in the 2004/5 report that Housing Tasmania lacked a strategic plan for social housing (Auditor General of Tasmania 2005). This is being addressed and the annual report published by Housing Tasmania and the Social Action and Research Centre (Flanagan 2007), outlines a range of whole-of-agency

strategic priorities for 2006–2010. There are four key areas for action outlined under their goal of 'stronger, healthier communities':

- Invest in community housing.
- Provide quality services for Tasmanians in rural and remote communities.
- Address the environmental and community-wide factors that impact on health and social conditions.
- Research, identify and promote the factors that contribute to community capacity.

The government of Tasmania has been reluctant to bear the risks of a new housing plan due to lack of funds (Gabriel & Jacobs 2006).

Aim

- To ensure safe, adequate and affordable housing for Tasmanians who receive low incomes.

Principles

- Asset decisions be informed and planned.
- Asset management supports operational viability.
- Housing Tasmania's dwellings meet the needs of its clients.
- Asset management contributes to the development of communities.

Issues

Housing Tasmania's rental revenue is decreasing at the rate of approximately one per cent per annum due to changes in household size and composition, fewer dwellings and increased placements of high-needs tenants.

Greater targeting of public rental housing has resulted in housing being provided to an increased proportion of people with high needs. The number of frail elderly in Tasmania is projected to quadruple by 2046. This projection has implications for the type of public rental housing assistance provided to a growing number of the aged. Some 18 per cent of Housing Tasmania's household members are in receipt of a disability pension. Such people often require high levels of support, service coordination and tenancy management, and consequently, are more expensive and time-consuming to accommodate.

Housing Tasmania manages tenants who *stick* to its assets. In other words, a house often becomes a family's home, with all the associated personal attachments that usually come with a home. Present household composition and needs do not always match well with older public housing stock.

Greater than 70 per cent of dwellings are concentrated in suburbs in Tasmania's six cities, and Bridgewater and Gagebrook.

There is a shortage of skilled tradespeople in the construction industry. However, Housing Tasmania is experiencing some delays in its construction program because of shortages in the construction industry due to substantially increased building approvals and starts.

This tension between meeting social need and providing cost-effective asset solutions is likely to increase if Housing Tasmania continues to target its service to clients with high needs, as is likely to be the case.

Definitions underlying the user cost of capital are problematic. Under the CSHA National Performance Indicator Framework, the Division calculates direct cost per unit. However, this indicator does not relate directly to asset performance.

3.5.7 Victoria

The Office of Housing (OoH) is responsible for the management of public housing assets in Victoria. It is located within the Department of Human Services (DHS).The extent to which the OoH has managed housing assets varies. A recent report showed that Victoria has approximately 54 000 housing stock (Atkinson & Jacobs 2008b). Another recent audit report (Auditor General of Victoria 2004) showed that when property condition assessments (recording the condition of each property and its maintenance) have been carried out in Victoria, they have highlighted the following:

- Establishment of the maintenance call centre has helped maintenance workload of housing services.
- The method of recording data has not been effectively implemented.
- The database and its software are out-of-date and do not offer the functions needed.
- Quality control procedures and survey management have not been implemented.
- Much of the data is inaccurate and asset life-cycle costing has not been implemented.

Objectives

The objectives of the asset management strategy are to:

- Maintain and enhance the asset base.
- Prioritise place-based improvement initiatives.
- Re-profile stock and grow in strategic locations.
- Attract private sector investment.
- Improve asset management processes.

Principles

The principles to be applied are:

- Service delivery needs are to guide asset practices and decisions.
- Asset planning and management are to be integrated with corporate and business plans, budgetary and reporting processes.
- Asset management decisions are to be based on evaluations of all alternatives that take into account full life-cycle costs, benefits and risks of assets.
- Asset management activities are to be undertaken within an integrated government policy framework.
- Accountability and responsibility for asset management are to be established, clearly communicated and implemented.
- Sustainability of assets is to be included in asset planning.

Issues

Key issues for managing this asset portfolio are:

- Over 30 per cent of properties are over 30-years-old and were constructed to meet the needs of a community that has changed dramatically over this time.
- Three-bedroom family dwellings and bed-sitter units for older people were the main forms of public housing produced in the past.
- Current demand for housing assistance is mostly from smaller households – singles, small families, older persons.
- Most inner city high-rise and walk-up estates have reached the age at which they require major capital investment, linked to appropriate management and community support.
- Direct funding for capital investment in public housing has been significantly reduced by the Commonwealth government over the last 10-years.
- Victorian government policies and strategies such as Growing Victoria Together and Melbourne 2030 indicate that we need to plan for a diverse and ageing population, and for Melbourne to become a more compact city.
- As regional centres and towns grow or decline, public housing needs to be able to respond appropriately.

3.5.8 Western Australia

In Western Australia new policies have been developed to provide better guidance to organisations in the areas of asset planning and maintenance. These policies and guidelines are embedded in a new Strategic Asset Management Framework for all asset classes, particularly buildings (Department of Treasury and Finance 2005). The strategies plan is proposed toward maintenance of the dwelling assets and is in the form of restoration, refurbishment (improvement) and maintenance of housing stock owned and managed by the Department

Principles

- Confirm what assets are owned and/or controlled by the agency (including leased assets).
- Clearly identify the profile of the asset portfolio, in terms of asset classification.
- Clarify the asset profile, in terms of:
  - quantity
  - date of acquisition and original cost
  - depreciation
  - current costs of operation
  - condition
  - functionality and strategic purpose
  - location of asset.

The Strategic Asset Management Framework includes Capital Investment Plans and Asset Disposal Plans, as well as new reporting requirements for maintenance expenditure. Presently, the Western Australia Department of Housing and Works cater for a wide variety of assets that support an extensive range of services. Its tenantable housing stock is approximately 338 000 dwellings (Roy Morgan Research

2007). The key challenges facing the housing department are with regard to meeting the increasing demand for housing services from citizens. The ageing stock is currently undergoing revitalisation. In addition, community housing programs have been introduced to assist citizens in the low-income category.

4 HOUSING ASSET ATTRIBUTES

Part of any asset management strategy involves keeping track of the various relevant attributes of the stock of housing (e.g. age, dwelling type, etc.) as well as how it is used (utilisation rate, etc.) to see how this impacts on the financial bottom line. This chapter uses internationally recognised definitions of physical and financial attributes of stock to derive measures of asset value, and from that some measures of performance for all Australian social housing organisations.

4.1 Physical attributes – context

Our theoretical understanding of the idea of 'social housing attributes' has been shaped by the 1989 report of Centre for Housing Research at the University of Glasgow to the British government (1989); the work of Stone (2003); Gruis and Nieboer (2002) and Nieboer and Gruis (2004).

'Housing attributes' relate to the basic physical, financial, environmental and social aspects of a house such as the built structure, physical conditions, cost of operation, and occupancy. In addition to absolute features, social housing characteristics relative to allocation, renting and dwelling ownership are also significant. For the purpose of this study, we will investigate the physical and financial characteristics. Public/social housing in Australia are of various types and attributes. Some are typically in large estates of monolithic blocks of flats, multi-units, single dwellings, often of dubious quality design and construction, while others were located in the remote areas of cities and in distant regional areas, where low-priced, sizeable land holdings were available (Arthurson 2004) The congruence of social factors and physical configurations has led to evaluation of the attributes of public housing in Australia (as in the UK and USA) (Stone 2003).

First, collection and utilisation of data on physical characteristics (such as building fabric, dwelling size, age, type and location) are fundamental to good asset management. The combination of physical attributes of the ageing post-war housing stock is contributing to increasing maintenance costs and will inevitably lead to concentration on housing upgrades, maintenance and repairs, to sustain existing stock. Originally, public housing organisations were given the mandate to control, manage, maintain and improve their residential and communal properties. Also, since the government is the largest financier of social/public housing, the collection of housing-attribute information is necessary for the viability of the housing organisations. It is also important for SHA organisations and governments to update their records on account holders.

Second, social factors such as interaction, lifestyle, provision of communal and recreation areas, crime rates and family sizes and income, have contributed to the development of strategies to evaluate public housing attributes. For example, investigation by social workers of buildings to determine their fitness and likelihood of supporting human conditions has exacerbated the interested in housing attributes (Stone 2003; Kaganova & McKellar 2006).

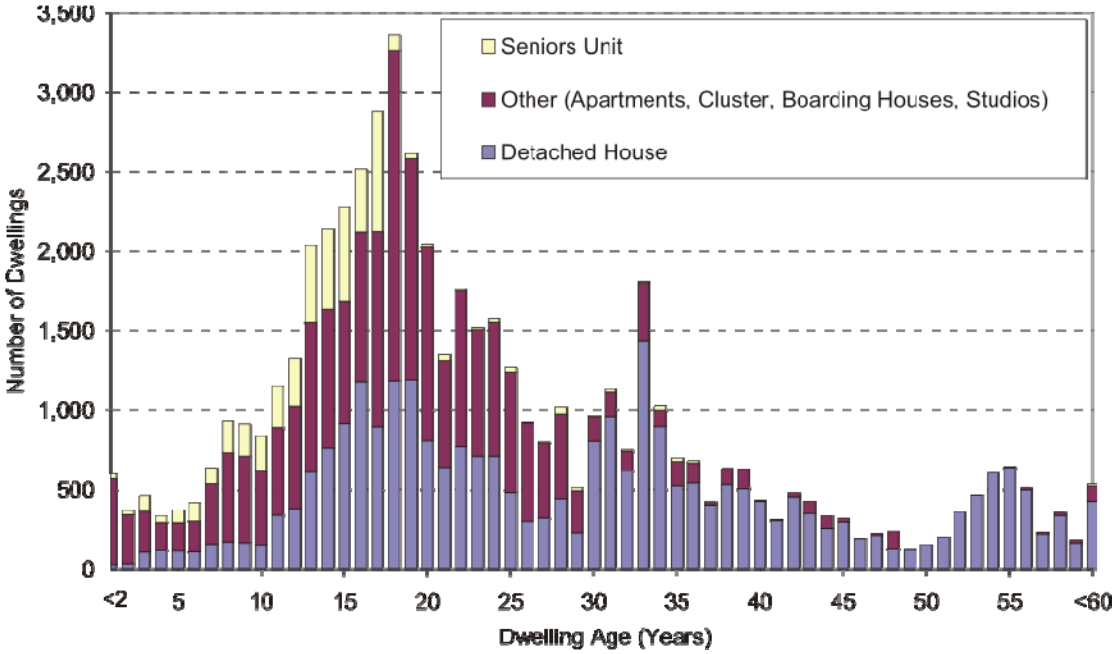
A key strand of the research on social housing asset management has considered how the dwelling characteristics tend to be spatially matched, mismatched, or distant, from applicants. In some cases the need for affordable rents and cheaper public housing accommodation, for example, may mean that some locations are distant from certain social and economic opportunities or do not provide adequate transport linkages.

4.2 Physical attributes – use

4.2.1 Age characteristics

Age, or year of construction, is often analysed in more detail. For example, Figure 8 illustrates the age of housing stock in Queensland, which has an average age over 20-years (Queensland Government Department of Housing 2008).

Figure 7: Age of housing stock in Queensland



Source: Queensland Department of Housing, 2008

4.2.2 Ownership attributes

Table 6, using data from SHAs for the period ended June 2008 in Australia, shows the collection of dwelling characteristics by type of ownership (public or private). Presently the major providers of social housing services are government-administered social housing organisations, with only a few private and non-governmental organisations. Most of the data collected about social (public) housing attributes vary from state to state, often based on organisational objectives.

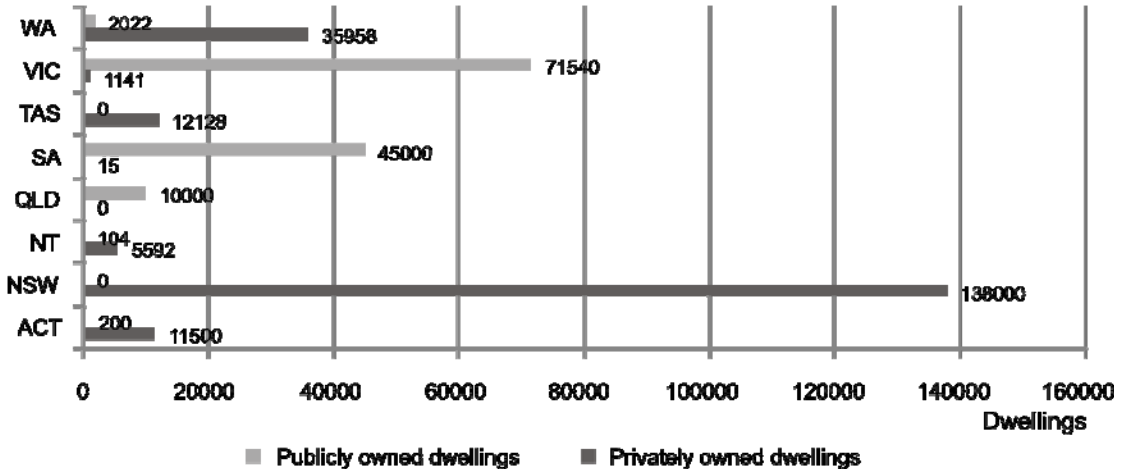
Table 6: Collection of dwelling characteristics by type of ownership

SHA collects dwelling characteristic data for :	***Owned private dwellings***	***%***	***Leased private dwelling***	***%***
Collected	6	75%	4	50%
Not collected	2	25%	4	50%
Total	8	100%	8	100%

Source: Field survey, 2008

To break this down further, it is necessary to examine the number of dwellings in each category of ownership. The type of ownership of property dwelling stocks held by social housing organisations, administered by state and local governments as at 30 June 2008 are shown by jurisdiction in Figure 7. The majority of social housing estates operate differential rent schemes and leaseholds.

Figure 8: Owned private and leased dwellings by state

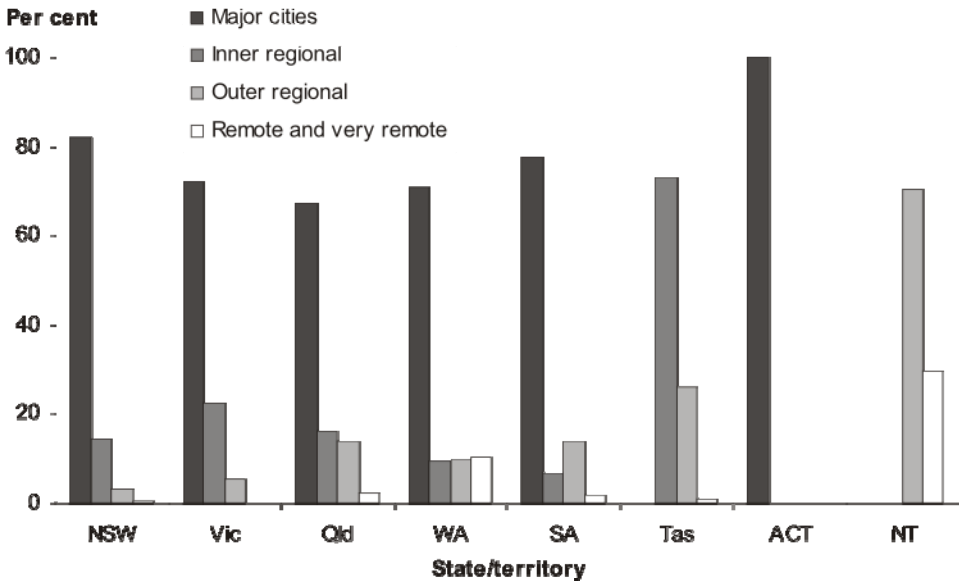


Source: Field survey, 2008

4.2.3 Location attributes

Figure 9 shows the relative location (cities, inner regional, outer regional and remote) of public rental dwellings, broken down by jurisdiction. The location of dwellings in relation to demand varies significantly.

Figure 9: Dwelling stock by location



Source: AIHW (2009)

According to the AIHW 2009 report, nationally, 73 per cent of all public housing dwellings were located in major cities, 16 per cent were located in inner regional Australia, 9 per cent were located in outer regional Australia, and 2 per cent were located in remote and very remote areas of Australia.

4.2.4 Data collection about physical attributes

The primary attributes of public dwellings that are collected by social housing organisations include dwelling types, size, location, age of dwelling, general condition, construction materials and heritage listing. Table 7 indicates the collection of such information by jurisdiction.

Other detailed dwelling attributes investigated by housing organisations include Age, location and the physical problems associated with dwellings, such as asbestos, energy efficiency, hazards, insulation, floor coverings, painting, etc.

Table 8 reports the extent to which jurisdictions collect data about various physical problems within their housing stock.

Table 7: Fundamental attributes of social housing data that are collected by housing authorities

Public housing attributes (non-private dwellings)	*QLD*	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
Year of construction	A		S	A	A			M
Type	A	M	A	A	A		N	A
Size (rooms)	A	A	A	A	A		N	A
Ensuite bathroom facilities	A		N	N	x		N	A
Kitchen facilities	A		N	N	x		N	A
Material of outer walls	A		S	A	N		A	A
Location	A	A	A	A	A		A	A
General condition	A	A	N	N	N			A
Heritage-listed dwellings	A	A	N	N	N		N	
Non-compliance with the Building Code of Australia			N	N	x		N	N
Issues/problems	A		N		N		N	A

Source: Field survey, 2008. A = all, M = mostly, S = some, N = none, blank = no response

Table 8: Problem attributes that are investigated in dwellings by jurisdiction

	QLD	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
Asbestos	Yes	Yes		Yes				No
Retrofitting	✘	✘						✘
Condition of wet areas	✘	✘		✘				✘
Spalling rectification	✘	✘						✘
Solar panels	✘	✘						✘
Hazards	✘	✘						✘

	QLD	VIC	WA	ACT	SA	TAS	NT	NSW
Structural integrity	✗	✗		✗				✗
Lead paint	✗	✗						✗
Age of facilities	✗	✗		✗				✗
Insulation	✗	✗		✗				✗
Floor coverings	✗	✗		✗				✗
Painting	✗	✗		✗				✗

Source: Field survey, 2008. ✓ = present, ✗ = not present, blank = no response or no data

4.3 Financial attributes – context

Asset management for public housing is concerned both with social returns and financial returns, and must find the correct balance between these sometimes contradictory objectives. Historically, the financial characteristics of the housing management has been redefined and so has the constituency of organisation and individuals who can be affected by it (Kaganova & McKellar 2006). Financial performance can be related to the economic efficiency of asset management, in terms of the economic costs that are attached to the provision of housing (Nieboer & Gruis 2004). This section will identify where these conflicts might be greatest, what key information is required to support the necessary financial analysis, and examine some options for financial measurement that might be useful to social housing managers.

4.3.1 Social objectives and financial optimisation

Meeting social objectives is critical to achieving a social housing organisation's strategic objectives and might have consequences for how it approaches its financial management, such as asset valuation or stock disposal. Some examples include the following.

Income stream value, rent-charging policy, and asset strategy development

The income stream valuation of a dwelling is the product of its discounted net income stream plus its discounted final valuation. The total income stream value can be obtained by adding all of the outcomes for all of the dwellings in the portfolio.

By adding acquisition costs and disposal revenues associated with the new strategy and calculating a new income stream outcome for the revised asset strategy portfolio, it will be possible to assess whether the income stream can support the asset strategy or whether additional funding will be required.

To this extent, the social rent-charging policy and anticipated gross rent receipts become crucial to any asset strategy that is being developed. See Appendix A for the mathematical representation of income stream value.

Stock re-profiling and income collars

Stock re-profiling is associated with rationalisation of dwelling stock that is held at multi-levels. Under commercial asset analysis the internal rate of return (IRR) is assessed and poorly performing or projected high operating cost assets may be subject to disposal. The proceeds are then normally allocated to refurbishing existing, or purchasing new, assets where the internal rate of return is assessed as being superior.

However, social housing objectives will demand that the portfolio's dwelling type and location profile be driven by client need, with the result that the portfolio will display sub-optimal risk/return characteristics.

4.3.2 Financial performance

The concept of financial performance has three distinct yet related elements:

- Economy (the purchase of resources at lowest cost consistent with a specified quality and quantity).
- Efficiency (a specific volume and quality of service using the least resources capable of delivering the specification).
- Effectiveness (providing the right service to enable the (social landlords) to implement their policies and objectives, (Gruis 2005, p.1775).

This section of the paper focuses on economy and efficiency.

Issues pertaining to valuation

In most situations, social housing providers use market value to determine what their portfolio of housing assets is worth. However, some recent disposals of social housing have revealed that the market may, on occasions, differentiate between the price it is willing to pay for dwellings which have been used for public housing, and similar dwellings in the same locality which have been privately owned and managed.

There are various methods for determining the value of real estate, but they are based on:

- A comparison with realised transactions (the comparative approach).
- The costs of (re)building the estate (the cost approach).
- Legal guidelines for valuation (the legal approach).
- Principles from business administration theory (the management accounting approach).
- The income which can be generated with an estate (the income approach).
- Economic theory (the economic approach) (Gruis 2002, p.1779).

Gruis found many Dutch housing associations base their financial position and the value of their dwellings on historical cost prices. The value based on the historical cost price provides no information about future expectations and nothing about the financial consequences of asset management decisions. Therefore, it is not a relevant indicator for use in performance measurement. Gruis argues that *from a financial-economic point of view, the value of an asset is determined by how it is expected to develop in the course of time*. (Gruis 2002, p.1779).

The net present value (NPV) or discounted cash flow (DCF) method is the basis for determining the income stream value.

Measures of return

There are a variety of financial measures of asset return. The main ones are:

- The gross or net return from income: the outcome realised over a certain period (usually one year) divided by the capital value at the beginning of that period.
- The capital return: the growth in capital value which has been realised over a certain period, divided by the capital value at the beginning of that period.
- The total rate of return (TRR): the sum of the income and the capital return.

- → The internal rate of return (IRR): the average financial return realised over the entire exploitation period of a dwelling.
- → The net present value (NPV): the discounted or present value of the expected net future outcome.

A number of the measures are unsuitable for social housing providers, because they rely on a methodology which assesses the return from acquisition to disposal. The difficulty with using these methods is that most social housing providers have portfolios with dwellings at various ages and stages and new acquisitions are a small number of dwellings at the margin of their activities.

Economic inefficiency

Housing authorities are able to set performance indicators and measure many aspects of housing asset management. However, in the context of a social housing portfolio whose composition is driven by social objectives (client need) rather than maximising return, assessing efficiency becomes problematic.

Comparing the differences between various rates of return measures will not readily assist, because of the suboptimal nature of asset choice and maintenance. So, in this context how do social housing asset managers determine which dwellings are performing efficiently and which are not, and which estates are economical and which are not?

In Britain the Housing Corporation is the custodian of performance measurement for social housing providers. The Housing Corporation uses a number of financial performance indicators in support of its assessments.

Regarding the Dutch social housing approach, Gruis highlights that a range of Dutch housing associations are using the income-stream approach to valuation. He also suggests that once this method is applied it can be extended to deal with issues of efficiency measurement.

4.3.3 Income stream value and risk assessment

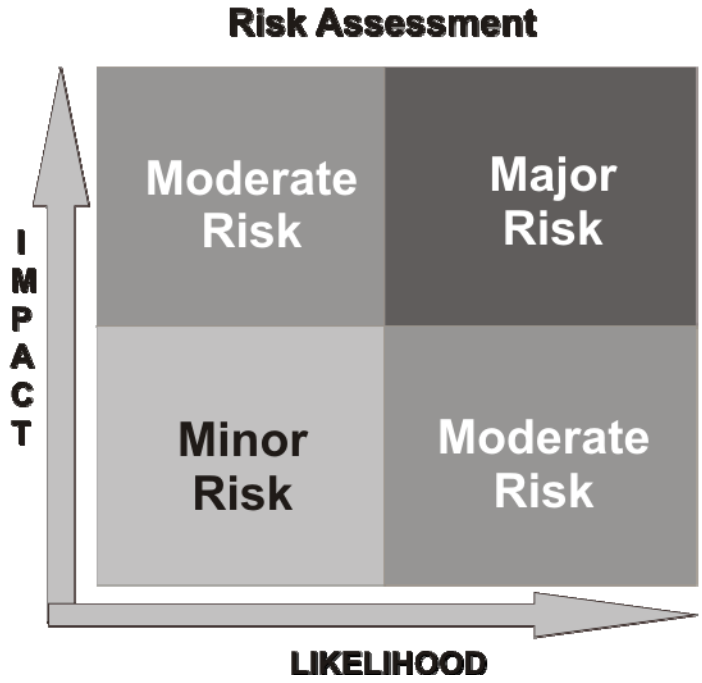
Because social housing providers are encouraged to develop asset strategies assessed over long periods of time, and because most dwellings have service lives of at least 40-years, developing indicators of financial performance will involve a range of variables where the risks of change are significant.

Risk has two dimensions forming a risk continuum (Figure 10) consisting of the probability or likelihood that an event may occur, and the impact or severity of a single event should it occur.

Figure 11 documents the main risks which apply to social housing. Moreover because the income stream value of a portfolio of social housing is strongly influenced by the future behaviour of SHAs it is highly uncertain. For example SHAs determine whether or not they want to obtain operating surpluses from their dwellings and therefore how much they will charge their tenants. The level of the financial resources generated will obviously have an impact on the organisations' asset management strategies, so there is an interaction between the asset management strategy and the income stream value.

This then leads to the question, how can we reliably assess the risk involved in realising the estimated income stream value?

Figure 10: The risk continuum



Source: Hall, J. Seminar on Risk Assessment in Social Housing, 2003

Figure 11: Main social housing risks

Source: Hall, J. Seminar on Risk Assessment in Social Housing, 2003

Sensitivity testing and Monte Carlo simulation

There are two methods by which the potential impact of risks on income stream value can be assessed, sensitivity analysis and Monte Carlo simulation, referred to statistically as deterministic or stochastic approaches.

The deterministic approach involves establishing a range of values for each of the variables based upon hypothetical 'cases' (i.e. *best, most likely, worst*, etc.) and then

calculating the combined impact on the income stream. However, the pitfall with this method is that the decisions regarding the outliers (i.e. best and worst) are arbitrary and may not be reflected in actual events.

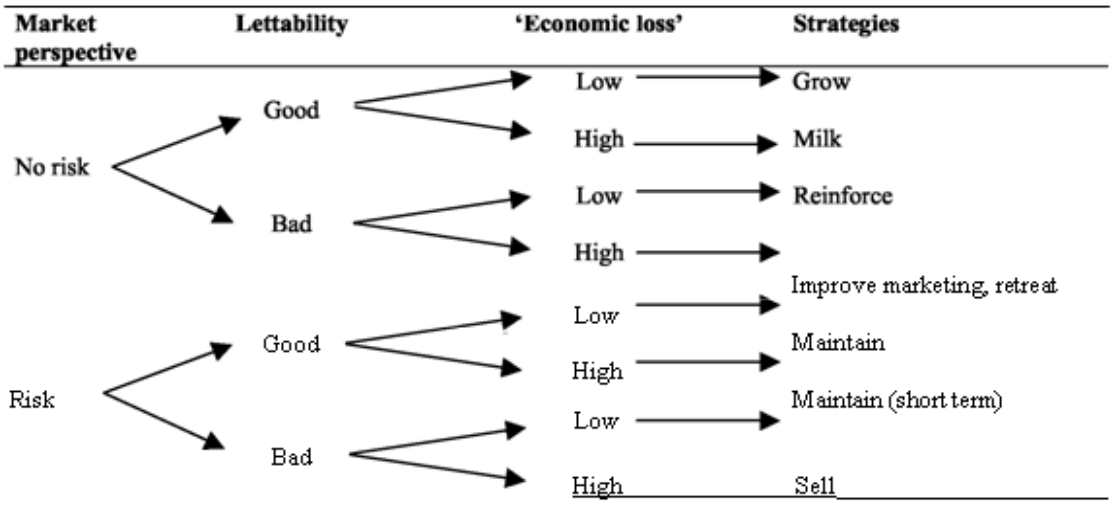
Under stochastic approaches all of the actual variable percentage changes, quarter on quarter, (dwelling price change, interest rates, building materials cost changes) are documented, correlations identified and a probability distribution established for, say, 1,000 potential scenarios. The scenarios are then applied to the income-stream calculation using a professional software program designed to assess risk. The distribution of income-stream outcomes is then mapped.

Portfolio and estate analysis

Following the discussion regarding risk, a further question emerges: have stochastic approaches to risk assessment been applied to social housing elsewhere, and if so, what have been the outcomes and/or limitations?

Van der Flier found that, while portfolio analysis can be used, it has limited applicability for social housing organisations because of the impediments toward diversification experienced by social landlords (Van der Flier & Gruis 2002).

Figure 12: A marketing portfolio approach to asset strategy



Source: Van der Flier and Gruis, 2002, p.15

However, they did conclude that a marketing portfolio analysis may offer valuable information to social housing providers who want to develop a market-orientated stock policy. However, there are differences in the consequences drawn from the analysis between commercial and social housing providers, mainly in the selection of asset strategies. Figure 12 illustrates the marketing approach to asset strategy.

4.3.4 International context for financial performance indicators

Very little has been published about indicators of financial performance of social housing. This study presents a description of the range of financial performance indicators currently in use for social housing assets in the Netherlands and Britain.

The Netherlands

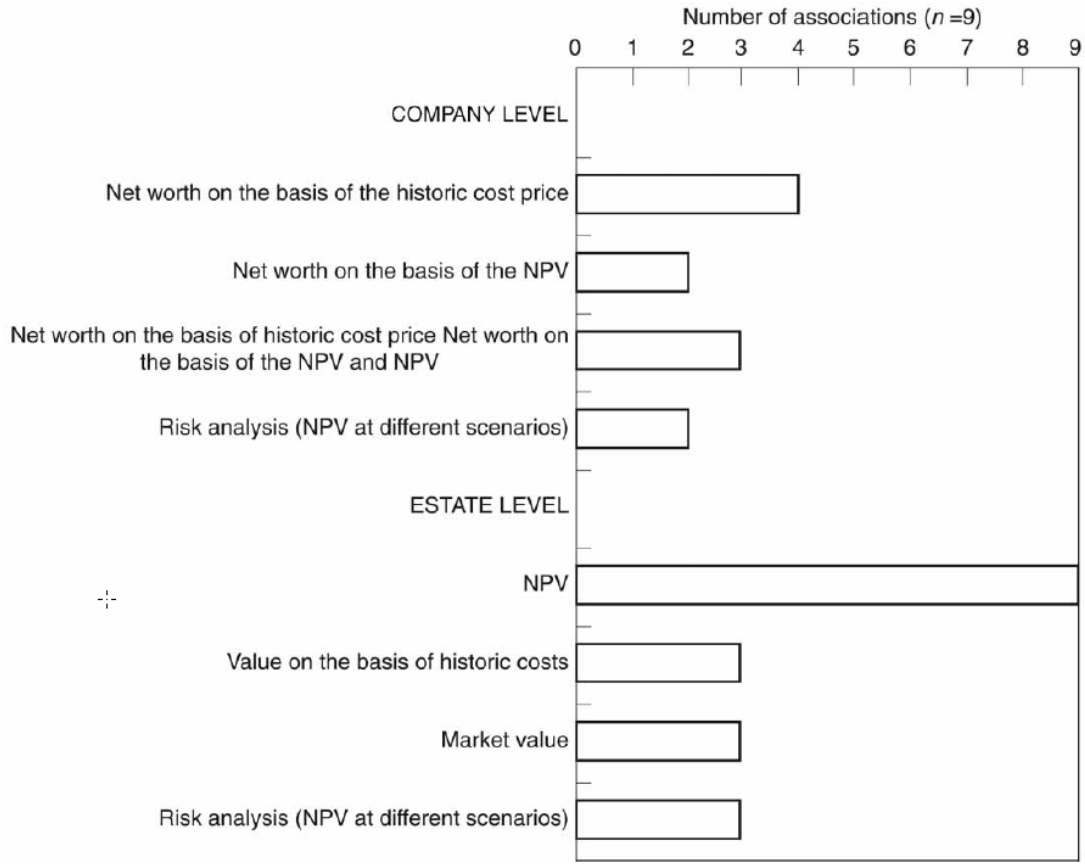
Figure 13 sets a range of financial indicators used by a sample of nine Dutch housing associations.

One of the housing associations also looks at two other indicators, which it considers crucial for its investment decisions at the estate level.

1. The *direct* return, measured as the ratio of the NPV to the investment costs; this indicator generates a percentage for the return on investment over the whole exploitation period, based on expected cash flow.
2. The *indirect* return, measured as the ratio of the increase in market value (after investment) to investment costs.

The housing associations are using the NPV of the income stream as a measure of estates, but only two are applying this technique to their whole portfolio. This suggests it is primarily being used as a comparative measure to make resource choices between different estates.

Figure 13: The financial return indicators applied at the company and estate levels by the nine associations.



Source: Gruis, 2005, p.1780

Similarly, only two associations are currently applying risk-management techniques to portfolio assessment.

Great Britain

The Housing Corporation of Great Britain has set the asset performance for registered social housing associations. The housing associations receiving government assistance are required to fill in the appropriate documentation and return to the Housing Corporation. The indicators are related to operating costs, rents, stock conditions and repairs performance.

It is interesting that there is a dominance of short-term indicators and a relative absence of measures to assist longer-term strategic asset management.

4.3.5 Australian context for financial performance indicators

Set out below are the financial performance indicators currently in use for social housing assets in Australia.

ACT

The guideline for financial performance measures in the ACT, as set out in the government's Public Housing Asset Management Strategy, 2003 include:

- Rejuvenation of stock.
- Building sustainable communities.
- Flexibility of stock to meet needs.
- Value for money.
- Targeted maintenance.

The ACT indicators are again characterised by short-term outcomes and tend neither to deal with longer-term strategic asset management, nor with decisions about estate optioning and asset acquisition, retention and disposal.

NSW

The NSW Treasury in its publication, *Asset Maintenance Strategic Planning* set out the following indicators.

Table 9: Performance indicators: *Asset Maintenance Strategic Planning*

Performance standard (defined success)	***Performance indicators and measures***	***Basis of measurement***
Assets are available within appropriate levels of downtime and/or service disruption	Cost of major defects/area.	Trend over time (to consider asset replacement, changed usage or cost of service delivery)
	Total defect costs/annual expenditure	Trend over time (an indicator of adequacy of maintenance expenditure)
	Age/value per category	Target/trend (to monitor portfolio age profile and life-cycle maintenance profile)
Cost of maintenance is reasonable	Maintenance cost to no. of occupants ($/occupant) Maintenance costs compared between facilities or assets	Target/trend (to identify/manage highest-cost assets)
	Maintenance cost per unit of service delivery ($/user)	Target (to measure service cost, to manage service strategy and maintenance strategy)
	Maintenance cost to facility replacement cost (%)	Target (indicates adequacy of maintenance expenditure)
	Maintenance cost to useable physical measures ($/m², $/km travelled)	Target (indicates benefit/cost return)
	Maintenance cost to total operational cost (%)	Target (indicates significance of assets to service delivery, to manage service strategy and maintenance strategy)
	Maintenance cost to 5-year moving average maintenance	Target/trend(to manage life-cycle

Performance standard (defined success)	*Performance indicators and measures*	*Basis of measurement*
	cost (%)	maintenance)
Majority of maintenance is programmed rather than emergency	Cost of responsive maintenance/cost of planned maintenance cost of responding to defects in key categories, e.g. statutory, structural, waterproofing, key plant items	Target/trend (to manage maintenance strategy); trend (to identify and manage risks)
	Ratio of emergency maintenance cost to total maintenance cost (emergency maintenance index)	Target/trend (to manage risks and maintenance strategy)
	Ratio of breakdown call-outs per period to average call-out rate (%)	Trend over time (to manage maintenance strategy and contracts)
Maintenance programs are completed within budget allocations	No. of complaints of unacceptable standards per period per $1000K spent	Trend over time (to manage maintenance strategy and procurement)
	Ratio of actual maintenance expenditure to budgeted maintenance expenditure (%)	Target/trend(to manage expenditure priorities and maintenance expenditure)
Asset maintenance completed in the period planned.	Cost of maintenance due / average annual maintenance expenditure	Target (to manage maintenance strategy and allocation)
Asset continues to support service delivery	Cost of refurbishment awaiting funding / average annual refurbishment expenditure	Target/trend (to manage asset strategy, maintenance strategy and allocation)
Asset values maintained	Asset valuations completed / total assets in Portfolio Change in portfolio values / time	Target (to identify outstanding valuations); trend (to meet reporting responsibilities; to indicate investment level)
Risks are identified and contingency plans are in place Total asset management (TAM) Plans address service and asset risks.	Risk management plans being implemented; risk management plans updated per year. Divisions providing input to TAM Plans; divisions signing off on TAM Plans	Target (to ensure identified risks are managed); target (to ensure current risks are identified); target(to manage corporate governance risks)

Source: NSW Treasury 2004

The NSW guidelines are predominately short-term focused but do contain elements of longer-term strategic planning.

Queensland

The Queensland Department of Public Works listed the following indicators in its *Building Maintenance Performance* publication:

- Maintenance costs/m²
- Maintenance cost ($)/service delivery measures (e.g. maintenance costs ($)/patients treated, students taught, office workers resident, customers serviced)

- Total cost of maintenance ($) as a percentage of asset value
- The aggregate cost of deferred maintenance ($) as a percentage of asset value
- Deferred maintenance ($), as a percentage of annual maintenance expenditure.

Because of the focus on maintenance the indicators tends to focus on matters relating to short-term efficiency.

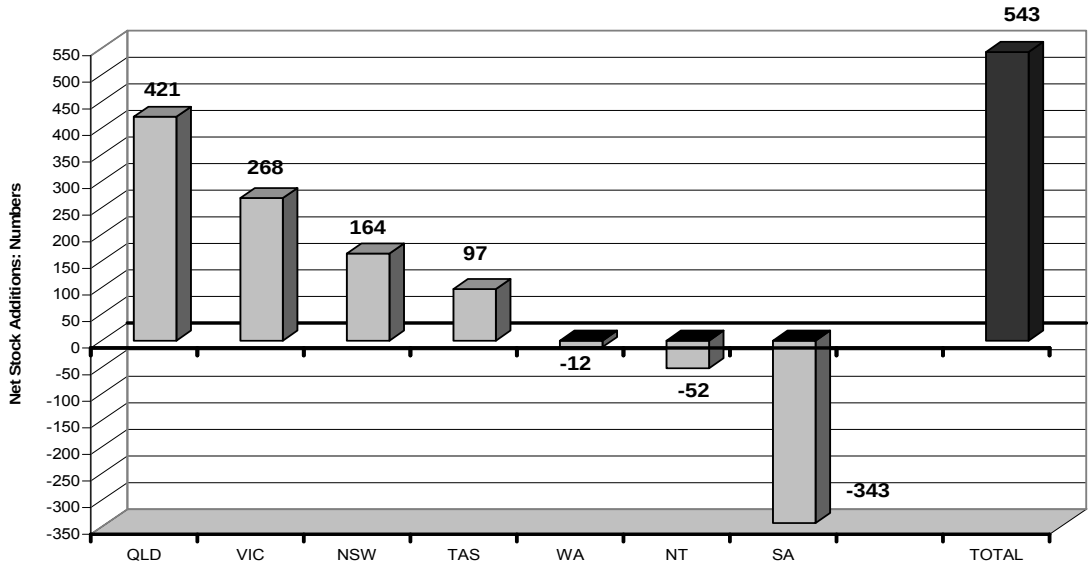
Western Australia

In Western Australia the measurement financial performance which is being implemented in phases, include elements of its strategic plans, as well as capital investment plan and business case guidelines.

Victoria

The measurement of financial performance is an integral part of the plan and practice of social housing in Victoria. In Victoria, the management of existing properties, investment in new properties and disposal of properties takes into account full life-cycle costs, benefits and risks of assets. The Office of Housing uses a number of financial performance indicators in support of its assessments, but these indicators are focused on the overall return of the organisation (Department of Human Services 2004).

Figure 14: Australia: all state housing authorities: stock additions (acquisitions plus redevelops minus demolitions minus sales): 2005/06



Source: Field study 2008

4.4 Financial attributes – use (Australian)

4.4.1 Stock expansion is minimal and expenditure on acquisitions is a minor part of total asset allocations.

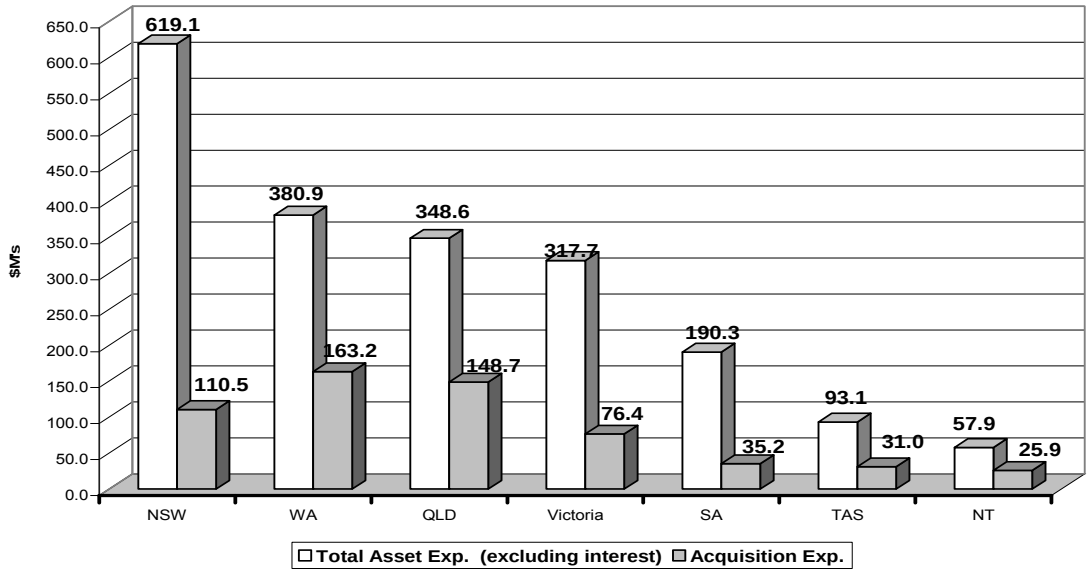
Figure 14 shows the net public housing stock expansion which occurred in Australia (ACT data is missing) in 2005/06. It indicates that total stock numbers declined in three of the seven SHAs, while in only two did net new stock exceed 200 dwellings per year. Queensland's net additions were considerably greater than all other states,

but net stock additions in both Queensland and Victoria represented just 0.8 and 0.4 of 1 per cent of the total existing stock in the two states, respectively.

These physical numbers are also reflected in the expenditure outcomes.

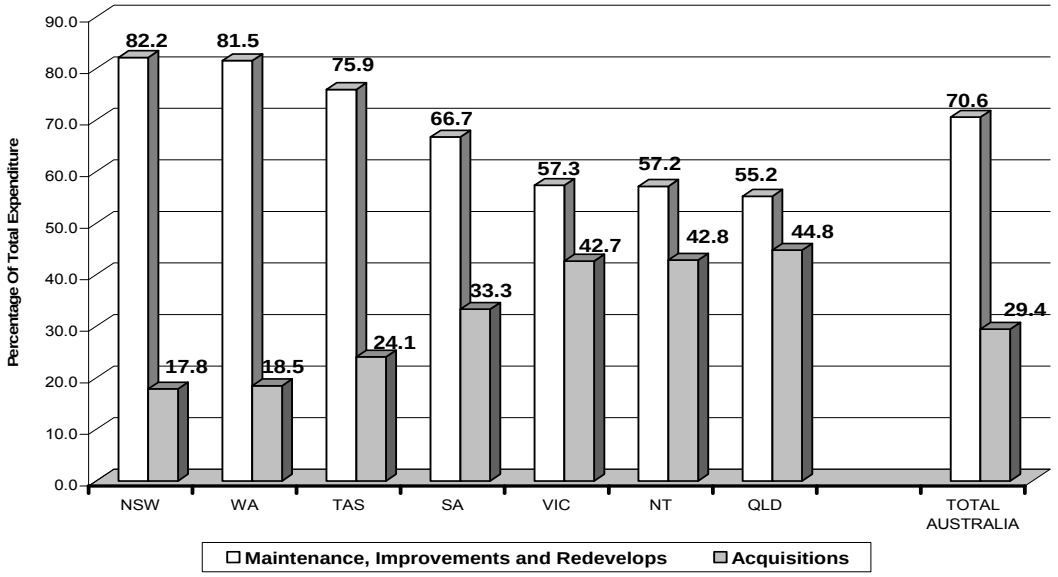
Figure 15 sets out total asset expenditure (excluding debt servicing) and acquisition expenditure for the seven authorities, and Figure 16 shows the proportions of total asset expenditure allocated to maintenance, improvements and redevelopments, and acquisitions, and for all Australia.

Figure 15: All state housing authorities: total asset expenditure and acquisitions expenditure: $m: 2005/06 (June 2006 dollars)



Source: Field study 2008

Figure 16: All state housing authorities: percentage of total asset expenditure allocated to maintenance and improvements, and acquisitions: 2005/06 (June 2006 dollars)



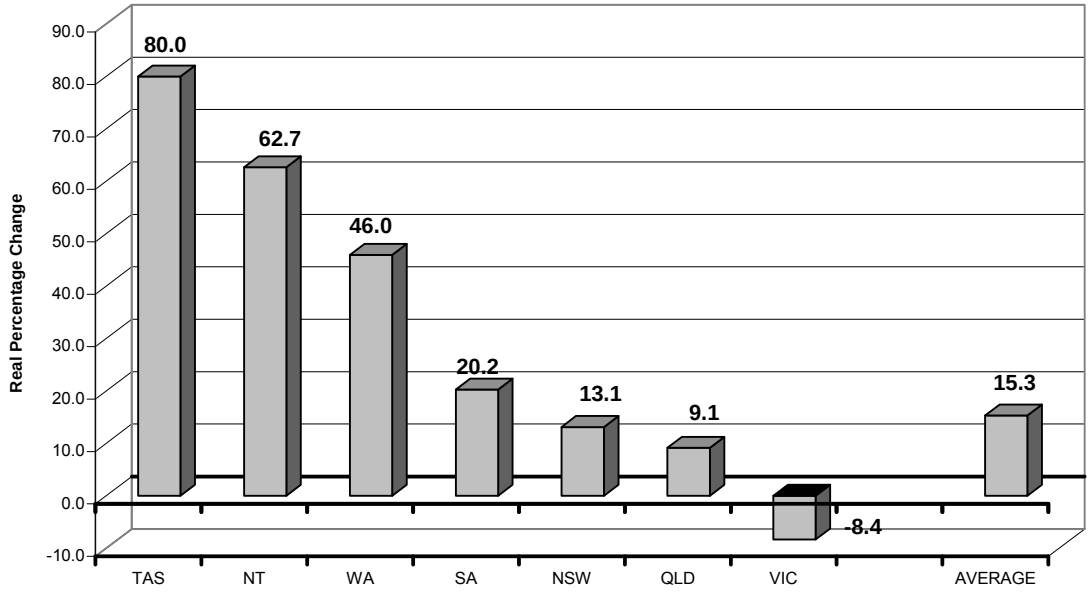
Source: Field study, 2008

These two graphs demonstrate the emphasis on the preservation and enhancement of existing dwelling assets with acquisitions only comprising more than a third of asset expenditure in Victoria, the Northern Territory and Queensland. Only in Queensland is acquisition expenditure approaching the proportions spent on preservation and enhancement. Across Australia asset preservation and enhancement accounts for over 70 per cent of asset expenditures.

4.4.2 Asset expenditure is growing rapidly and arguably is well resourced

Figure 17 sets out the real percentage change in asset expenditure between 2003/04 and 2005/06 and Figure 18 sets out asset expenditure as a percentage of dwelling asset value.

Figure 17: All state housing authorities (real percentage change in total asset expenditure (less acquisitions): 2003/04–2005/06



Source: Field study 2008

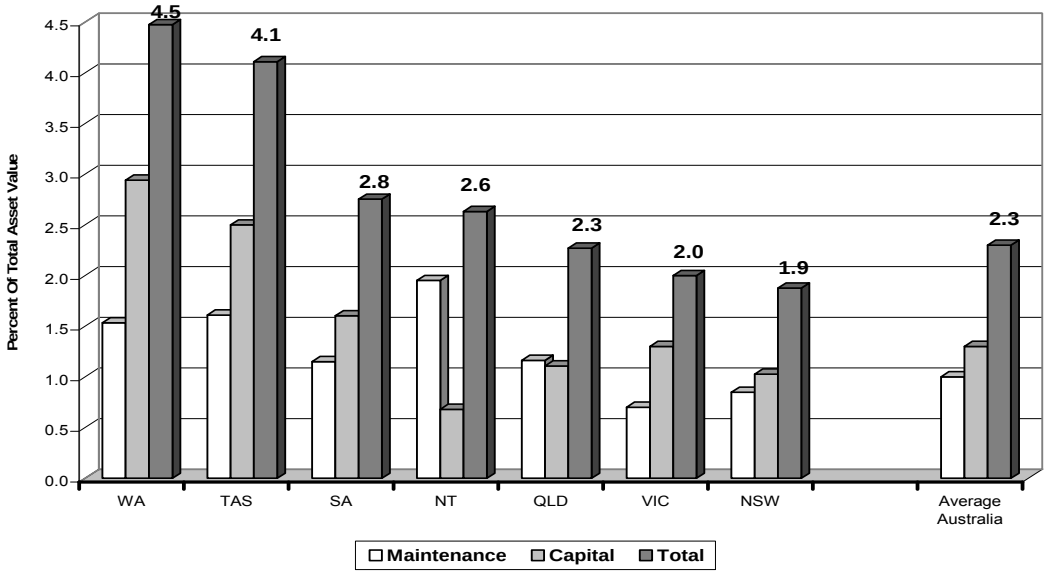
With the exception of Queensland and Victoria all states experienced double-digit growth in real expenditure on existing dwelling assets with four states increasing expenditure by in excess of 20.0 per cent. Real total asset expenditure on existing dwelling assets across Australia increased by 15.3 per cent on 2003/04 levels.

In 2005/06 asset allocations to existing dwellings comprised in excess of 2.0 per cent of current asset values in all states except NSW and exceeded the benchmark 1.5 per cent, per annum estimated as being required to maintain real value in earlier public housing life-cycle costing studies (completed in South Australia in the mid 1970s).

4.4.3 Responsive maintenance is consuming a high proportion of asset maintenance expenditure and is growing fast

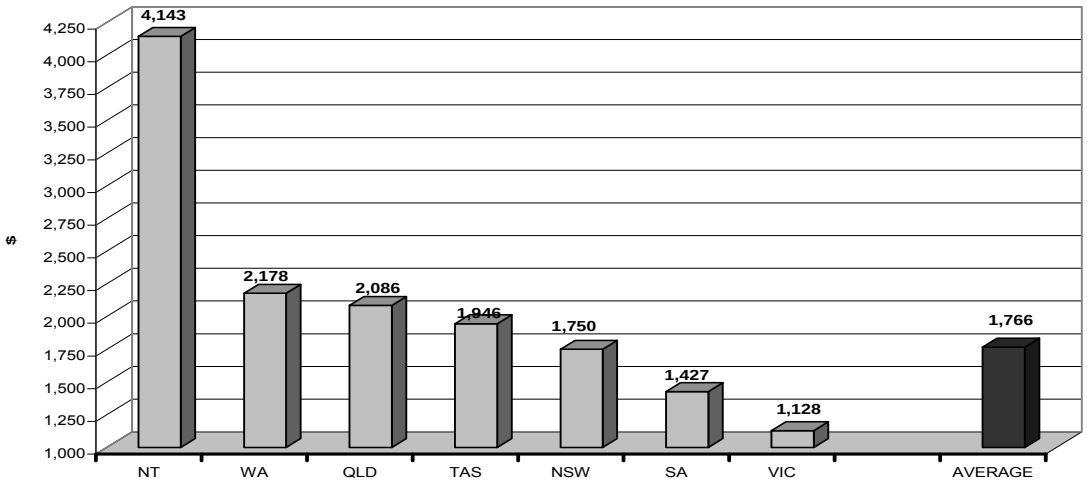
Figure 19 sets out average maintenance expenditure per dwelling in each state and Figure 20 sets out the proportion of total maintenance expenditure being spent on responsive and planned maintenance for all states and the weighted average for Australia. Figure 22 charts the percentage growth in this expenditure over the period 2003/04 to 2005/06.

Figure 18: All state housing authorities: total maintenance and capital expenditure (minus acquisitions) as a % of asset value: 2005/06 (June 2006 dollars)



Source: Field study 2008

Figure 19: All state housing authorities: average maintenance expenditure per dwelling: 2005/06 (June 2006 dollars)



Source: Field study 2008

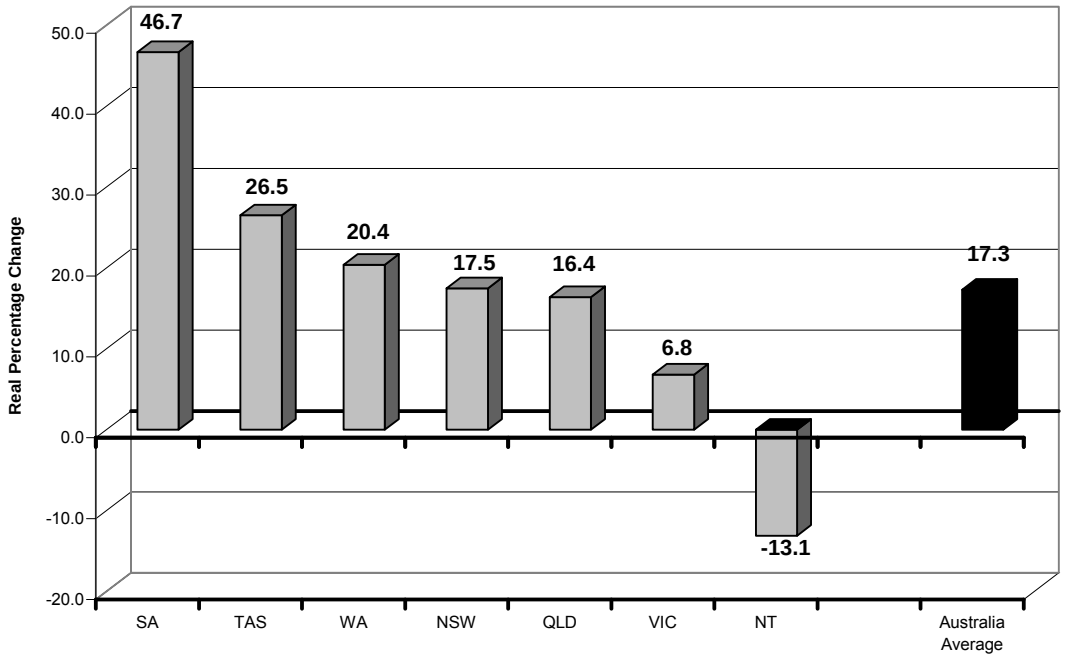
Much of the substantial difference between the Northern Territory and other states can be attributed to the elevated cost structures occurring as a result of diseconomies of small scale, isolation, and long distances between stock locations.

Four states are averaging maintenance expenditure per dwelling within a $400 range of each other, while South Australia and Victoria have very low levels of actual maintenance expenditure. These relatively low levels must be examined within the context of these states' other allocations to improvements and redevelopment.

In four states responsive maintenance expenditure either exceeded that planned or is at a very similar amount (Western Australia). In only three states is planned

maintenance expenditure exceeding responsive maintenance, and for the whole of Australia nearly 60% of maintenance spending is responsive.

Figure 20: All state housing authorities: responsive maintenance expenditure: real percentage change 2003/04–2005/06



Source: Field study, 2008

Over the period 2003/04 to 2005/06 real responsive maintenance expenditure grew by more than 20 per cent in three states and more than 15 per cent in two others and only in the Northern Territory did this decline. Given the small increase in stock numbers and the emphasis on upgrading and redevelopment, these numbers suggest a hidden level of deferred maintenance.

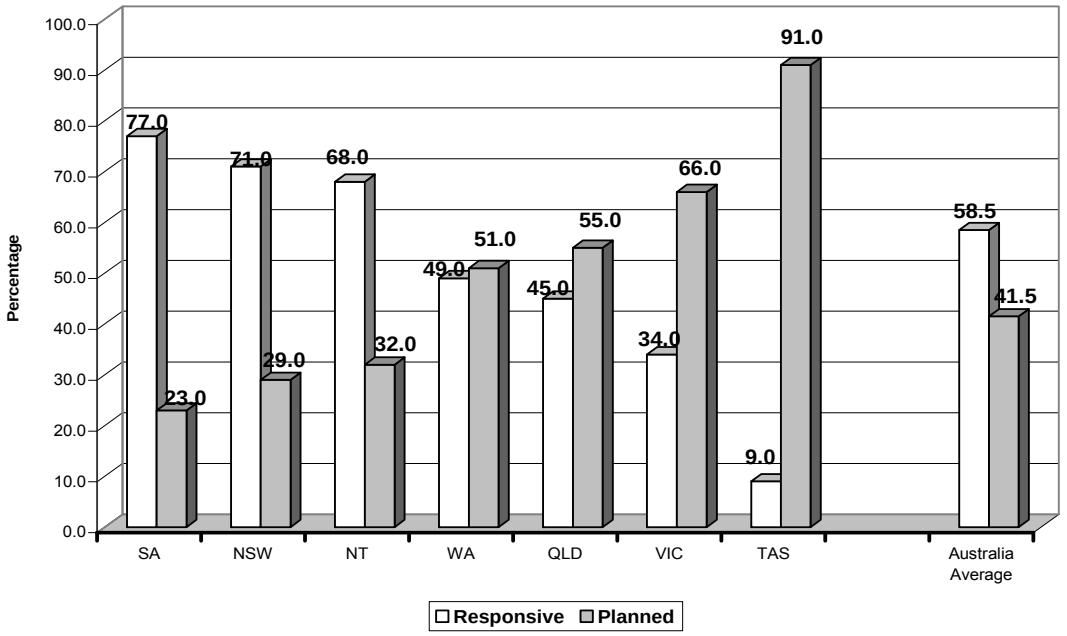
Figure 21 sets out the average cost of each dwelling acquisition for each state and compares this to the average dwelling asset value (minus South Australia for which there is an anomaly in the figures – the analysis produces an outcome of $1 674 000 per dwelling acquired).

In all states except Victoria the costs of acquisitions substantially exceed the current average market value per dwelling, probably a result of less than accurate procedures for assessing current values, (sampling being the problem) and rapidly increasing land costs in nearly all the capital cities.

4.4.4 Acquisition versus upgrade

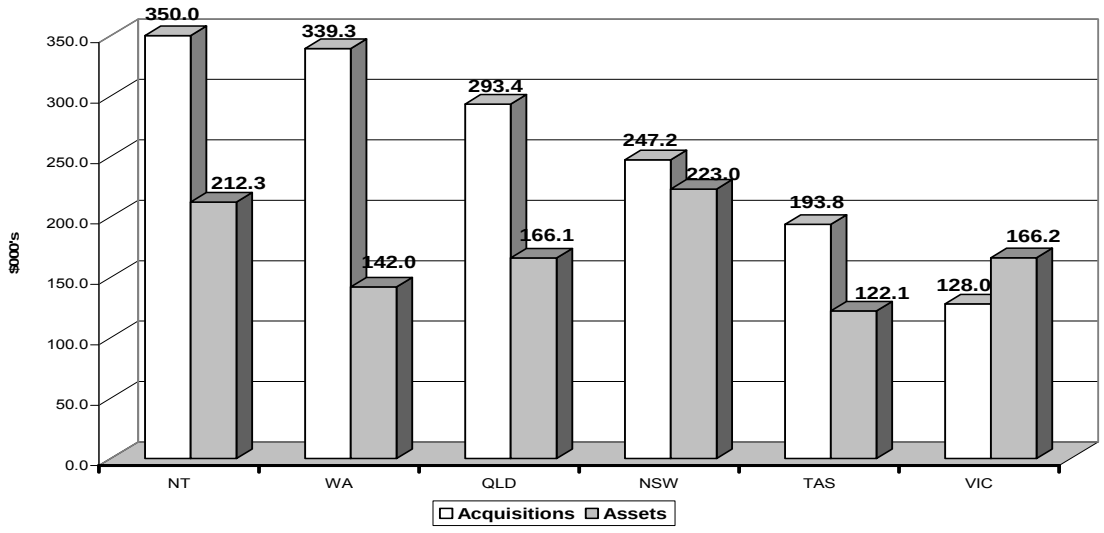
New stock is relatively costly (refer to Figure 22 for average acquisition costs) but upgrade and redevelopment costs vary widely (Figure 23 sets out the average costs of upgrading per dwelling in each of the states).

Figure 21: All State housing authorities: responsive and planned maintenance expenditure: percentage of total: 2005/06 (June 2006 dollars)



Source: Field study 2008

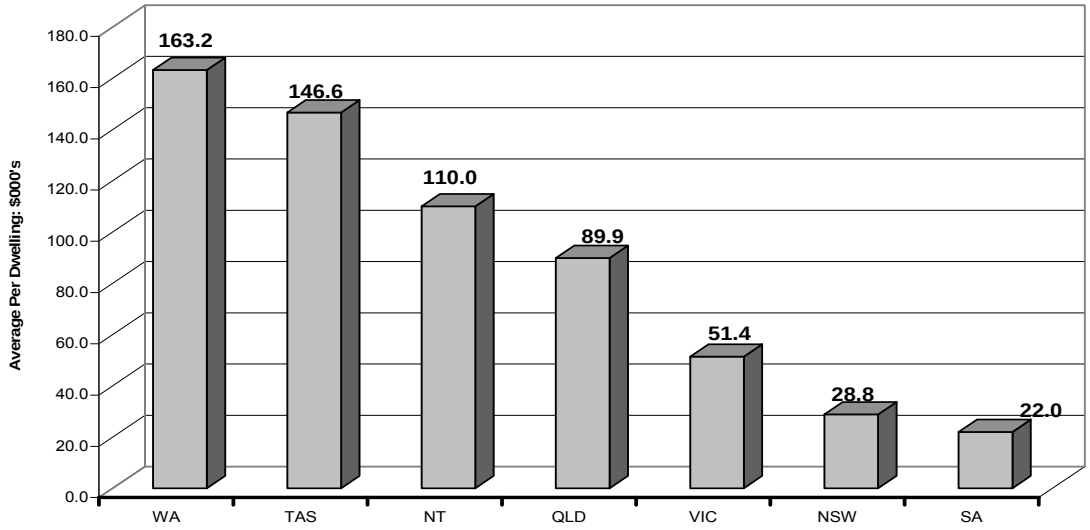
Figure 22: All state housing authorities: average acquisitions costs and asset value per dwelling: $000s: 2005/06 (June 2006 dollars)



Source: Field study 2008

It is unclear from the information obtained why there is such a wide variation in the cost of the upgrading as definitions of what was to be included were not provided. It is therefore assumed that the works are comparable. This will need to be explored further with the states. Only three states indicated any expenditure on redevelopment works and the amounts of expenditure were small.

Figure 23: All state housing authorities: average cost per dwelling: upgrading: $000s: 2005/06 (June 2006 dollars)



Source: Field study 2008

4.5 Detailed financial performance data

This section presents the summary results for a quantitative analysis of financial indicators for Australian jurisdictions. The scope is provided in Appendix B.

4.5.1 Quantitative: operating

The organisations' standard operating documents were analysed, where available, for the period 2005/06. In a number of cases jurisdictions were unable to provide disaggregated asset management. In these cases analysis has not been provided on these components. This data is broken down by jurisdiction in Appendices C–I. Comments following relate to comparison between jurisdictions. Detailed comments for each jurisdiction are in the appendices.

Table 10: Asset management expenditure per owned dwelling

Real (CPI adjusted) dollars	***NSW***	***NT***	***Qld***	***SA***	***Tas***	***Vic***	***WA***
Condition assessment	83						
Life-cycle costing	22						
Other asset management	37						

Table 11: Total asset management expenditure per dwelling and compared to total operating overhead expenditure per dwelling (salaries and admin.)

Real (CPI adjusted) dollars	***NSW***	***NT***	***Qld***	***SA***	***Tas***	***Vic***	***WA***
Total asset management (TAM)	141						
Total overhead expenditure	1802						

Table 12: Unplanned or responsive and planned maintenance expenditure per dwelling and total maintenance expenditure per dwelling

Real (CPI adjusted) dollars	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Unplanned or responsive	1249	2832	939	1103	174	414	1057
Planned or cyclical	501	1311	1147	324	1772	814	1121
Total maintenance	1750	4143	2086	1427	1946	1228	2178
Net interest dwellings	355	-472	396	2057	838		

While total maintenance expenditure per dwelling averages $2100 per dwelling over all states, it may be noted that at the extremes, Victoria's expenditure is relatively low (half) and the NT's expenditure relatively high (double).

Table 13: Total asset operating expenditure (management and maintenance) and compared to total operating expenditure

Real (CPI adjusted) dollars	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Total operating	5021	4143	5371	4815	5845	4485	3978
Total asset operating: excluding interest	1892	6713	2086	1427	1946	1220	2178

Table 14: Management asset operating expenditure analysis

Real (CPI adjusted) dollars	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Condition assessment % of TAM	58.7						
Life-cycle costing % of TAM	15.2						
Other assert management % of TAM	26.1						
TAM % of total overhead	7.9						
TAM % of total asset operating	7.5						
TAM % of net income	2.9						

Table 15: Non-management asset operating expenditure analysis

Percentage	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Unplanned and responsive % of TAM	71.4	68.4	45	77.3	8.9	33.7	48.5
Planned or cyclical % of TAM	26.6	31.6	55	22.7	91.1	66.3	51.5
TM as % total operating	34.9	61.7	38.8	29.6	33.3	27.4	54.8
TM as % of total assets	2.4	2	1.2	1.2	1.6	1.6	1.5
Total asset operating as % of total operating	37.7	61.7	38.8	29.6	33.3	27.4	54.8
Total asset operating as % of net income	39.3	49.3	42.4	30.5	48.2	29.9	49.5
Net interest of assets	0.5	0	0.2	0.6	0.7	0	0

This indicates that Victoria and the Northern Territory are once again at the extremes, with Victoria's expenditure on maintenance being low and Northern Territory's expenditure being high.

4.5.2 Quantitative: capital

Table 16: Changes in stock by number

Numbers	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Spot purchase	367	0	190	21	45	117	67
Build and construct	80	74	317	0	115	435	414
Total acquisitions	447	74	507	21	160	552	481
Improvement	7323	68	1080	503	239	2607	239
Redevelopment	332	6	27	126	0	34	671
Demolition	313	10	40	276	10	293	498
Dwellings sold	302	122	73	264	53	25	493
Net new dwellings	164	-52	421	-343	97	268	-12

Overall growth in stock for all states in this period was 543, with substantial decline in SA and substantial growth in Queensland and Victoria. New South Wales and Victoria were the main users of improvement, and Western Australia the main user of redevelopment.

Table 17: The proportion of the total asset expenditure program devoted to acquisitions, improvements and redevelopments, by stock numbers and total expenditure

	Numbers		*Expenditure*	
New South Wales	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	3.2	5.3	21.4	28.4
Improvements	89.2	87.1	57.5	54.3
Redevelopments	3.4	4	20.5	16.9
Disposals	4.1	3.6	0.5	0.5
Northern Territory	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	17.2	27.4	98.3	75.8
Improvements	32.2	25.2	0	22
Redevelopments	0.9	2.2	0	0
Disposals	49.8	45.2	1.7	2.2
Queensland	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	17.7	30.1	44.5	60.4
Improvements	50.3	64	52.5	39.4
Redevelopments	0.1	1.6	0	0
Disposals	31.9	4.3	3	0.2
South Australia	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	1.0	2.1	26.2	28.0
Improvements	75.2	49.6	27.4	8.8
Redevelopments	4.2	12.4	38.9	56.5
Disposals	19.6	35.9	1.5	1.6
Tasmania	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	26.1	35.4	0.0	45.1
Improvements	0.0	52.9	91.8	50.9
Redevelopments	0.0	0.0	0.0	0.0
Disposals	73.9	11.7	8.2	4.0
Victoria	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	19.2	17.2	24.0	30.7
Improvements	75.9	81.0	57.5	58.3
Redevelopments	2.7	1.1	11.7	3.3
Disposals	2.2	0.8	0.1	0.1
Western Australia	***2003/04***	***2005/06***	***2003/04***	***2005/06***
Acquisitions	35.6	25.5	57.2	53.3
Improvements	0.0	12.7	12.9	12.7
Redevelopments	35.7	35.6	0.0	0.0
Disposals	28.7	26.2	27.2	31.9

Table 18: Average capital cost of acquisitions per dwelling including transaction costs

$000s	***NSW***	***NT***	***Qld***	***SA***	***Tas***	***Vic***	***WA***
2005/06	247.2	350	293.4	1674	51.5	128	339.3
2003/04	215.4	520.9	263.5	1072	5	84	166.7

Table 19: Dwelling upgrades and redevelops: real average capital costs per dwelling: $000's

Real (CPI adjusted) dollars	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Average capital cost: upgrading				22	22	51.4	163.2
Average capital cost: redevelopment				562	562	220	0
Average capital cost: neighbourhood improvement				0	0	0	0.1
Total average capital cost: upgrading and redevelopment				133	133	53.5	0
Average working expenses capitalised				7.6	7.6	5.5	3.2

Table 20: Average capital cost per dwelling of upgrading and redevelopment

$000s	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
2005/06		6.1	89.9				198
2003/04		4.2	110				98.1

Table 21: Average disposal costs and profit or loss per dwelling

$000s	*NSW*	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Disposal costs		6.3	6.2	5.4		4.9	
Profit (+) or loss (-)		+22.5	-2.2	+4		+13.5	

Table 22: Some asset performance indicators

	NSW	*NT*	*Qld*	*SA*	*Tas*	*Vic*	*WA*
Deferred maintenance as a multiple of annual maintenance		3.4					
Deferred maintenance as a % of current asset value		6.6					
Average capital cost					193.8		
Future life-cycle costs as a multiple of annual upgrade and improvement expense					0.3		
Future life-cycle costs as a % of asset value					0.7		
Outstanding principal as a ration to asset value					16.4		
Deferred maintenance backlog					90		
Estimated future life-cycle costs					10		
Asset principal outstanding					248		

5 HOUSING ASSET MANAGEMENT PRACTICES

A second part of an asset management strategy involves the asset management practices applied in the management of the housing assets. Practices range from elementary financial management of the assets through to strategic management and practices adopted from corporate real estate management.

5.1 Financial measures – context

In Australia, the Commonwealth government supervises the activities of social/public housing organisations, through the SHAs. In the context of financial management, the need to pursue cost efficiency, or otherwise identify ways to release financial value such that additional assets could be provided, prevailed as a priority. While this changed with the advent of the federal government's $6.4 billion *Social Housing Initiative*—part of the *Nation Building – Economic Stimulus Plan*—nevertheless, financial strategies remain paramount in any consideration of asset management practices.

A review of the SHA asset management plans reveals that there are four key financial information elements required to answer the social housing asset management questions and to support asset strategy development. These are:

1. Income stream analysis.
2. Real time condition assessments.
3. Application of life-cycle costing techniques.
4. Gap analysis.

These four information elements can be expanded to financial practices relating to social housing and are approached from the point of view of an authority assessing its capacity.

5.1.1 Income stream analysis

Income stream analysis is used in circumstances where an asset strategy is to be self-financing or internally funded. The income stream value can be calculated by means of the NPV-method. The present value of future income or expenditure is determined by correcting cash flows for the return that is required over the period between the moment of valuation and the moment of occurrence of income or expenditure.

5.1.2 Real-time condition assessments

Real-time condition assessments enable the collection of building asset information that can be used for a variety of asset and maintenance management purposes. The key information obtained as a result of a condition assessment includes a:

- Condition index.
- Risk rating for the defect or deficiency.
- Maintenance works required.
- Cost estimates of works.
- Priority ranking of works.

When used with life-cycle costing, condition assessments enable organisations to prioritise the cost of asset maintenance or maintenance deferral.

5.1.3 Life-cycle costing

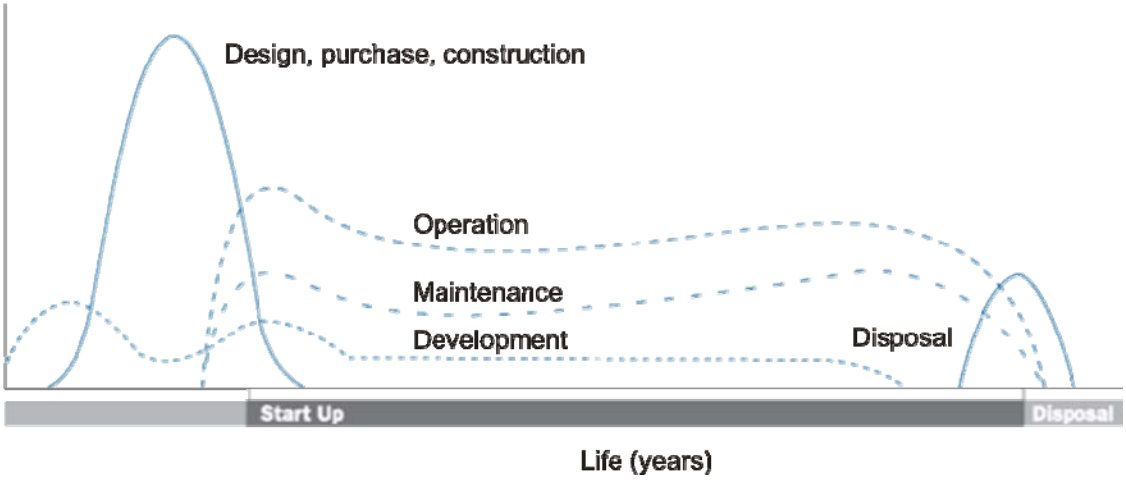
Future costs associated with the use and ownership of an asset are often greater than the initial acquisition cost. These costs can vary significantly between alternative solutions to a given operational need. Figure 24 shows a profile of typical costs associated with the life-cycle of built environment assets.

Consideration of the costs over the whole life of a property asset provides a sound basis for decision-making. With this information, it is possible to:

- Assess future resource requirements (budgeting).
- Assess comparative costs of potential acquisitions (investment appraisal).
- Decide between sources of supply (source selection).
- Account for resources used now or in the past (reporting and auditing).
- Improve system design.
- Optimise operational support.
- Assess when assets reach the end of their economic life and replacement is required (disposal) (AANO 2001).

Life-cycle costing is inherently uncertain and involves a range of assumptions (as variables) about the future.

Figure 24: Life-cycle costing



Source: ANAO, 2001, p.4

5.1.4 Gap analysis

Gap analysis is currently practised by a range of public housing authorities and consists of identifying the mix of types and locations of dwellings which would best 'fit' the anticipated client requirement. This best fit can then be tested against the existing portfolio and the anticipated outcomes of the strategic asset plan and the gaps clarified. This process helps to crystallise where dwelling investment and restructuring should occur as a priority and what adoption is required of any existing asset management plan.

5.2 Financial measures – trends

In Australia, social housing applicant demographics have changed, partly because of the influence exercised by political leaders and partly because of the changing social environment. Most dwellings in public housing are the responsibility of a public

housing association, including community housing authorities and local housing authorities (Priemus et al. 1999). Only a few are provided by private or not-for-profit organisations.

The most common functions include: new housing construction; acquisition; disposal; rent control; allocation and letting of properties; maintenance and repairs. These trends have brought new challenges to the public housing organisations and their capacities to ensure efficient service delivery and supply of appropriate affordable housing. However, clear differences have emerged in their adaptation to the new financial regime, producing vastly different regulatory systems and housing outcomes.

5.2.1 Current developments in SHA asset planning and management

During the 1990s a number of performance indicators designed for the Council of Australian Governments (COAG) were established for SHAs in Australia. Furthermore, a major review of regulatory frameworks for public and community housing has taken place (Lawson & Milligan 2008). A national regulatory system for community housing providers (ARTD Consultants 2009) is being proposed across a number of states and territories in Australia based on key performance indicators.

A social housing management regulatory system has now been established in Victoria, and is emerging rapidly in other states (SGS Economics and Planning Pty 2009). The Victorian system is similar to NSW, and was modelled after the National Community Housing Guidelines (2003) (CHFV 2007). This led to amendments to the 1983 Housing Act in 2005 (SGS Economics and Planning Pty 2009), which established a strong two-tiered regulatory system. This involved the establishment of the Office for the Registrar of Housing Agencies (ORHA) and a registration system for growth providers (registered housing associations) and other community-housing providers. Registration requires the satisfaction of defined criteria and the maintenance of performance standards. It also allows for state intervention via powers of inspection and enforcement by the Registrar (Housing Registrar 2009).

5.2.2 Asset planning is in the developmental stage

In Australia some SHAs have developed asset planning measures, while others are characterised by continuity. Table 23 shows a summary of the stage of development of each state in the implementation of asset management plans. Two states in Australia (NSW and Victoria) have completed the full suite of asset management plans, while Queensland has completed all except the asset disposal plan and South Australia and Tasmania have completed two of the four standard planning instruments. As might be expected, the smaller states of WA and the Northern Territory have yet to formally complete any asset planning documentation.

Table 23: Asset planning, Australia: State Housing Authorities

	State Housing Authorities						
Plans	***NSW***	***NT***	***QLD***	***SA***	***TAS***	***VIC***	***WA***
Strategic asset	✓		✓	✓	✓	✓	
Capital investment	✓		✓	✓		✓	
Maintenance	✓		✓			✓	
Asset disposal	✓				✓	✓	

Source: Field study, 2008. ✓ = present

5.2.3 Asset analysis techniques are developing rapidly

Asset analysis is in a rapid stage of development within four Australian states. Table 24 shows the principal techniques being used.

Table 24: Analysis techniques, Australia: State Housing Authorities

Asset analysis techniques	***State Housing Authorities***						
	NSW	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
Demand management	✓	✓	✓	✓	✓	✓	✓
Condition assessment	✓		✓	✓	UD	✓	UD
Life-cycle costing	✓			UD	UD	UD	
Value management	✓	✓	✓		✓		
Income stream							
Probability analysis							
Economic loss			✓				

Source: Field study, 2008. ✓ = present, UD = under development

Demand management is used by all states while condition assessments are being used in four states and are under development in two others. Only the Northern Territory has not begun this part of the asset analysis process.

Life-cycle costing programs are operational in NSW but are also being developed in South Australia, Tasmania and Victoria. Three states, the Northern Territory, Queensland and Western Australia have yet to commence this management process.

However, with the exception of NSW, the other states have yet to apply longer-term financial analysis techniques to their asset management, with no other organisation conducting any income stream, probability analysis (for the impact of external environmental variables on their asset management) or economic loss analysis.

5.2.4 Asset analysis techniques are very costly

The lack of attention to longer-term asset management techniques is probably a function of the high cost of developing them. Table 25 contains the authorities' estimates (where provided) of the costs of developing condition assessments and life-cycle costing programs.

Table 25: Costs of asset analysis, Australia: State Housing Authorities

Asset analysis techniques	***State Housing Authorities: $m***						
	NSW	***NT***	***QLD***	***SA***	***TAS***	***VIC***	***WA***
Condition assessment	10.0			1.0 p.a.			8.0
Lifecycle costing	1.0 p.a.						

Source: Field study, 2008

New South Wales estimates a full condition assessment costs approximately $10 million for 120 000 dwellings, while Western Australia suggests it will cost $8 million for less than a third of the dwellings in NSW. South Australia suggests that on a 5-

year basis the amortized cost is approximately $1 million per annum. NSW estimates it costs approximately $1 million per annum to run its life-cycle costing program.

5.2.5 Other ways of achieving asset management knowledge

As a result of these costs, jurisdictions are developing methods to avoid the necessity of repeating costly condition assessments. One state has spent considerable energy preparing classifications of all the different types of dwellings they own and more than thirty property attributes associated with each type of dwelling, including its age. The organisation has costed the repair or replacement of these attributes and logged when in the dwelling's life they are required. In this way they are able to avoid the need for such regular condition assessments, identify preventative maintenance requirements and *bundle* similar works required across a range of dwellings. The longer-term savings to maintenance and upgrade expenditure is estimated to be in the order of 15 per cent per annum.

This organisation has also drawn attention to the way in which the application of asset management techniques 'cuts across' the normal accounting conventions process in that both recurrent and capital reinvestment decisions fall out of the asset analysis process. Most organisations organise their expenditures and accounting by recurrent and capital expenditures and so a different set of accounting procedures may be required to ensure transparency in the asset expenditure process.

5.2.6 Financial performance indicators development

Table 26 shows the financial performance indicators being regularly used by the SHAs. A comparison with the range of indicators indicates that, with the exception of NSW, only a few of the short-, and none of the longer-term, financial performance indicators are being applied in Australian public housing authorities.

Further, government is continuing to hold controlling interest in social housing management. Direct financial support in the form of rental support or subsidies and government grants and loans is commonplace, while the challenge of private finance for social housing investments with capital-market loans is very minimal. Other financial resources include:

- Own resources, consisting of reserves that have been accumulated in the past and the proceeds from sales of disposable assets.
- Rental incomes.

Table 26: Asset financial performance indicators, Australia: State Housing Authorities

Asset performance indicators	*State Housing Authorities*						
	NSW	*NT*	*QLD*	*SA*	*TAS*	*VIC*	*WA*
Short term							
Rents collected as % of total rents due		✓			✓		
Net cost services				✓			
Budgeted *vs*. actual				✓			
Rents written off as % of rents payable	✓	✓			✓		
Per cent of maintenance spent on responsive *vs.* planned	✓	✓	✓				
Average annual operating cost per dwelling per week		✓	✓		✓		
Land asset value per dwelling			✓				
Building asset value per dwelling			✓				
Market value	✓	✓		✓	✓	✓	✓
Long term							
NPV of income stream	✓						
Net worth based on historic cost price		✓					
Financial efficiency							
Cost per person housed	✓						
Average maintenance costs per dwelling	✓						

Source: Field study, 2008. ✓ = present

5.2.7 Quantitative analysis of financial methods

A jurisdictional analysis of detailed responses to questions about financial planning methods is provided in Appendices C–I, with the scope of the analysis described in Appendix B.

5.3 Corporate approaches to asset management

Corporate approach to social housing management has a long history in public administration in developed economies (Rhodes 1998). Its primary objective is to ensure that economy, efficiency and effectiveness of performance is adhered to. In Australia, corporate management is not well-developed in the social housing sector. The reason is that public housing is constituted by several varied activities undertaken by an array of participants, including the government, public housing organisations, private housing organisations, citizen advocates, and so on. In the realm of government, which is the major sponsor of public housing, social housing has variable policies, objectives and asset-management activities.

Out of this policy mix has emerged recognition of the significance of sensible financial planning, efficiency, strategic management and market orientation in public housing

management. This type of asset management is what Priemus et al. (1999) referred to as ‘strategic housing asset management’. Also, strategic housing management may contain elements of portfolio asset management, such as defining the desired mix of dwelling types and rent level, analysing the performance of the residential portfolio, defining guidelines for management, acquisition and disposition of the estates in the portfolio (Priemus et al. 1999). Moreover, there has been variability in the application of asset management and strategic asset management in the public sector (Brackertz & Kenley 2002a); for example, Brackertz and Kenley (2002b) attempt to identify the tools for asset management and evaluation in the local government public sector, while Ming Yu and Han (2001) discuss the effects of information systems on public housing asset management.

The policy challenge is to identify good practice for social housing objectives, strategies and activities around the competing and often shifting views of stakeholders. According to McNelis (2007), ‘what happens to social housing will depend on which of the stakeholders prevails’. What is therefore important to note is that housing objectives relate to particular stakeholders, whose approaches seek to elaborate on the objectives of social housing as it relates to their needs.

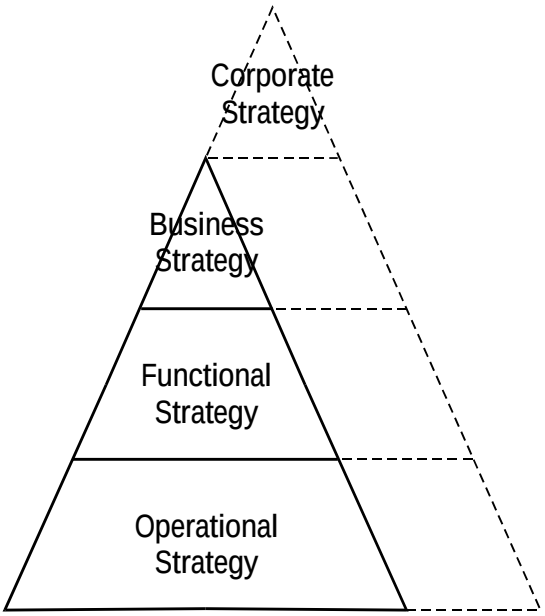
Best practice requires the integration of social housing objectives and corporate/regulatory asset management strategies. Social housing operates within the context of a society and economy, the purpose of which is to provide, among other things, a standard of living for all households (McShane 2002). These objectives can be achieved through a variety of social and economic activities, including: regulatory frameworks for construction and maintenance that provide a minimum standard for social housing; delivery of timely maintenance to customers; tenant participation; allowing tenants to understand their use pattern and costs; the processes for deciding whether and when to upgrade, demolish or sell dwellings; and functions undertaken by the government.

Concerns have been expressed about the inadequacy of public housing maintenance in many states in Australia (Auditor General of Victoria 2004; Auditor General of NSW 2005). For example, the Productivity Commission (Industry Commission 1993) stated that there was a need to increase effectiveness in public housing authorities, particularly where some commercial focus could be fostered. The housing authorities had recognised tenant dissatisfaction as a major issue and moved to fix it; yet, it felt that a new approach to service delivery was needed.

5.3.1 Phases of CRE asset management best practice

Management of public sector assets within the frameworks noted previously can be said to represent good current practice in asset management. However, while these strategic asset management plans make some acknowledgement to managing assets to meet organisational objectives, frequently the actual asset management strategies noted in an organisation’s documented plans are internally focused on the detailed operation of the assets and not on the business of the organisation. The basis for this assertion can be seen with reference to general strategic management models where hierarchical, tri-level layers of strategy are found. Figure 25 is typical of such models.

Figure 25: Layers of organisational strategy



After: Thompson Jr and Strickland III 2003, Figure 2.1

As such, layers of strategic activity and practices occur and are required at each of these levels. Good strategic asset management is most frequently practised at technical, operational levels where issues like maintenance, condition assessments and capital budgeting for new works predominate thinking and practice (Priemus et al. 1999). These are not unimportant but it is observed that practice generally occurs despite relatively poor framing of the organisations' business strategies. This is true whether that business has a private sector profit orientation, or a public and not-for-profit sector service-delivery orientation. The dominance of the technical issues identified occurs because asset managers, while knowledgeable in managing physical assets, lack sufficient *business* perspective to successfully carry this out. Technical folk tend to be focused on 'bricks and mortar' issues.

Real estate asset management (REAM) practitioners are further impeded in making this transition to 'business strategist' (Joroff et al. 1993) because of the lack of theoretical models that connect the operational and business strategy levels beyond the directive that asset management plans should be framed relative to organisational strategic planning. More strategic organisational management would be informed by a two-way exchange between organisational objectives and service and asset potentials.

Best practice asset management must surely be framed with stronger and better connections between operational strategies and business strategies. The transition from good practice to best practice requires, in the first instance, development of appropriately useful models, and second, the implementation of these in practice.

The Institute of Public Works Engineering Australia (IPWEA 2006) is one of the few authorities that recognises layers of asset management practice and associated practices, calling them *core asset management* (CAM) and *advanced asset management* (AAM) (INGENIUM and IPWEA 2006).

Core asset management is defined as:

Asset management that relies primarily on the use of an asset register, maintenance management systems, job/resource management, inventory control, condition

assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cash flow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised-decision-making) (IPWEA 2006, p.xiii).

Advanced asset management is defined as:

Asset management that employs predictive modelling, risk management and optimised decision-making techniques to establish lifecycle treatment options and related long-term cash flow predictions (IPWEA 2006, p.xii).

Each definition indicates respective practices which, in detail, are:

- *Core* (IPWEA 2006, p.1.9):
  - Risk assessment by identifying critical assets.
  - Asset registers with low (less detailed) level of component breakdown.
  - Asset condition and performance using hard data for critical assets but using desk-top analysis for less critical assets.
  - Asset condition and performance:
    1. Hard data for critical assets.
    2. Desk-top assessment by those with good knowledge of the assets.
  - Optimised decision-making at the level of cost-benefit analysis of capital options.
  - Level of service based on historical performance.
- *Core* (IPWEA 2006, p.2.8):
- Take a lifecycle approach.
- Develop core asset management plans based on:
  1. Best available current information and random condition/performance sampling.
  2. Simple risk assessment to identify critical assets.
  3. Existing levels of service (service level reviews come later).
  4. Contrasting existing management strategies with opportunities for improvement.
- Prioritise capital works using simple ranking criteria (subjective points scoring or simple cost–benefit analysis to evaluate options).
- Calculate long-term (10–20-years) cash-flow predictions for asset maintenance, rehabilitation and replacement, based on local knowledge of assets and options for meeting current levels of service.
- Provide financial and critical service performance measures against which trends and asset management plan implementation and improvement can be monitored.
- *Advanced* (IPWEA 2006, p.2.9):
  - The asset management strategy is clearly derived from a corporate strategic plan.
  - Long-term, whole-life plans and cost/risk/performance optimisation.
  - Objectives and performance measures are aligned and complementary.

- IT systems are integrated, used and understood.
- Competencies and training are aligned to roles, responsibilities and collaborative requirements.
- Strategies are risk-based, with appropriate use of predictive methods, optimised decision-making (ODM) techniques to identify the optimum long-term asset management plan to deliver a particular level of service.
- Iterative continuous improvement.

5.3.2 A business-centred asset management

As noted previously, considering a broader framework for moving from good to best practice asset management requires framing asset management practice with regard to business strategy and practice.

The existing models that attempt do this tend to come from the corporate real estate management (CREM) literature, where organisational benefit from property assets exists that is similar to that sought or required for public housing asset management. Notable exceptions are the (INGENIUM & IPWEA 2006) total asset management (TAM) process (albeit with the shortcomings previously noted) and enterprise-wide alignment (Kaplan & Norton 2006).

These models include:

→ The evolution to business strategist in managing the fifth resource – CRE (Joroff et al. 1993).

→ Strategic alignment through processes of:
- business alignment
- service definition
- internal operating strategies
- external operating strategies
- service delivery (Lambert et al. 1995).

→ A horizontal alignment across the organisational silos through CRE alone or through integration with other organisational or corporate infrastructure functions (Materna & Parker 1998; Englert 2001).

→ A four-way integrative process involving a corporate business strategy, business unit organisation and processes, corporate infrastructure resources strategies and infrastructure and processes (Englert 2001).

→ Enterprise-wide alignment, which for support services like CRE and asset management, occurs through being either a low-cost service provider, a product leader, or by providing complete customer solutions (Kaplan & Norton 2006). The latter is the only possible, sustainable option which has two options—customer intimacy or customer solutions strategies—both of which have consequential changes in competencies for support services toward relationship management, having a culture of collaboration, and adopting a customer focus. Furthermore, public housing organisations have fewer incentives to treat tenants as customers with attendant changes in how social housing could/should be managed.

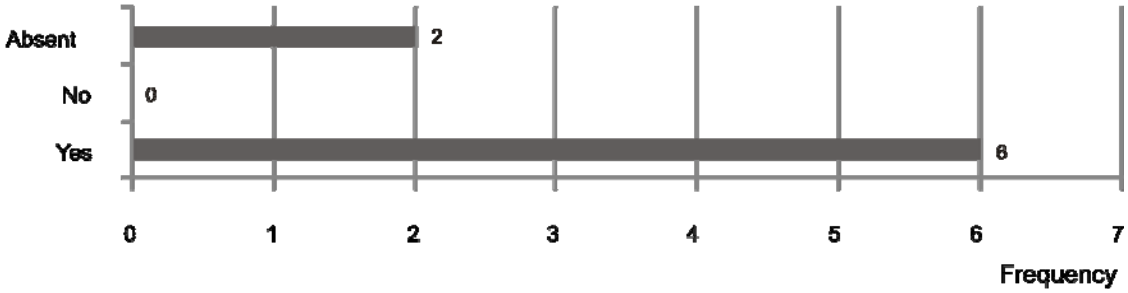
Any of these alignment approaches are intended to change the professional from being a functional, technical specialist to a trusted advisor or business partner.

However, few if any of the frameworks connect technical real estate management practices to business strategies other than being recipients of their outputs.

5.4 Management control and the practice of asset management

The survey on management practices for evaluating facilities asset conditions were designed to test each housing association's efforts in areas of asset management, such as asset management strategies, planning and programming processes, inventory data and analytic systems, implementation and monitoring systems (Switzer & McNeil 2004) and as stated in the US *National Cooperative Highway Research Program (NCHRP) Guide to Transportation Asset Management* model. The questionnaire also allowed some assessment of how the managers defined asset management.

Figure 26: Housing authorities' uses of an asset management framework



Source: Field survey 2008. AHURI Asset Management Project 2009

When asked: Does your organisation have an asset management program? All of the respondents said that they did frameworks (Figure 26). However, they said their programs are variable. The activities of those who claimed to have an asset management program as compared to those who said they have variable programs provide some insight into how the organisations define asset management, although given the sizes of the participant organisations, individual manager's views about asset management systems should be used with some caution. The following issues were related to the presence of asset management systems (Table 27):

- computerised data collection systems
- computerised data collection
- data storage systems
- electronic database system, as opposed to paper applications
- sophisticated methods for evaluating the condition of their assets.

The organisations declaring they had an asset management program tended to be less reliant on professional judgment and more likely to use defined standards and various tools for evaluating the condition of their assets.

This tends to give the impression that public housing organisations may define asset management as data systems rather than as management processes, as this high association of data management systems with expressed asset management frameworks may indicate confusion in definitions.

Table 27: Asset management framework

	QLD	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
Description of information to be recorded	✓	✓	✓		✓	✓	✓	
Units of measure	✓		✓		✓	✗	✗	
Level of accuracy is described	✓		✓		✗	✗	✗	
Asset classification and coding	✓	✓	✓		✓	✓	✗	
Asset register maintenance and use	✓	✓	✓		✓	✓	✓	
Measures of performance	✓		✗		✓	✓	✗	
Asset management strategies	✓		✓		✓	✓	✓	
Current and future dwelling requirements	✓	✓	✗		✓	✓	✓	
Methods of data capture	✓	✓	✓		✓	✓	✗	
Inspection	✓		✓		✓	✓	✓	

Field survey, 2008. ✓ = present, ✗ = not present, blank = no response or no data

Table 28: Primary criteria used for measuring the condition of public housing assets

Description	*States*
Property index tool	QLD
Property condition rating (age, cladding and value of required works)	VIC
No information	WA
Condition of construction (building fabric); condition in terms of presentation of property (tenant responsibility)	ACT
Three weighted criteria: condition, amenity and safety	SA
No information	TAS
Outer wall–internal wall condition; yard condition; solid hot water heater; basic building data	NT
Ninety components measured	NSW

Source: Field survey, 2009

5.5 Goal setting, planning and programming

Performance targets for facilities are generally established through sophisticated processes. All the organisations surveyed cited the use of a strategic management process. All of the respondents said they have different types of social housing stock and used the results of performance measures. Four of five asset managers said they generally used at least one asset management practice that involved the principles of corporate real estate.

All used different primary criteria for measuring asset condition (Table 28), as well as reviewing asset management goals at least annually. While this seems impressive, only six of the eight housing associations chose to answer this question, which suggests that others may have no defined schedule for refreshing system goals.

5.6 Inventory, data management and analytic systems

The government depends on social housing authorities to manage dwelling asset management and planning. Social housing authority asset performance is assessed through a variety of different mechanisms.

Table 29: Facilities asset management inventories

Requirements	*QLD*	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
History	✓	✓		✓	✓	✓	✗	✓
Survey history	✓	✓	✓	✓	✓	✓	✓	✓
General conditions	✓	✓		✓	✓			✓
Categories of buildings	✓	✓	✓	✓	✓	✓	✓	✓
Maintenance	✓	✓	✓	✓	✓	✓		✓
Location	✓	✓	✓	✓	✓	✓	✓	✓
Acquisition	✓	✓	✓	✓	✓	✓	✓	✓
Demolition	✓	✓	✓	✓	✓	✓	✓	✓
Disposal	✓	✓	✓			✓	✓	✓
Transfer		✓				✗	✗	✓
Tenant characteristics	✓	✓	✓	✓	✓	✓	✓	✓
Problems	✓	✓		✓		✓	✓	✓

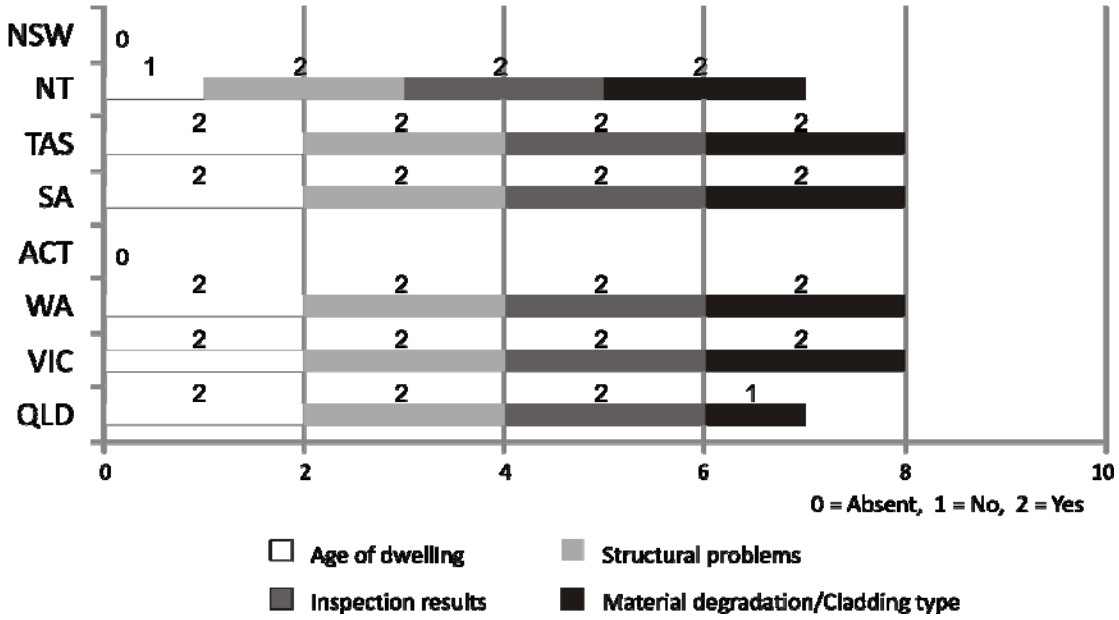
Source: Field survey, 2009. ✓ = present, ✗ = not present, blank = no response or no data

Inventory information is collected by all asset managers of the housing organisations surveyed (Table 29). Only one reported using a combination of computer and manual processes, and five reported an automated process. Of those using computerised systems, three use digital and video photography, while others use sophisticated technology.

From the survey, social housing organisations were much likely to consider preference factors for dwelling asset condition improvement which include physical and material conditions. For example, the factors considered for dwelling condition improvement shown in Figure 27 include the following: age of dwelling, structural integrity, inspection results and material condition.

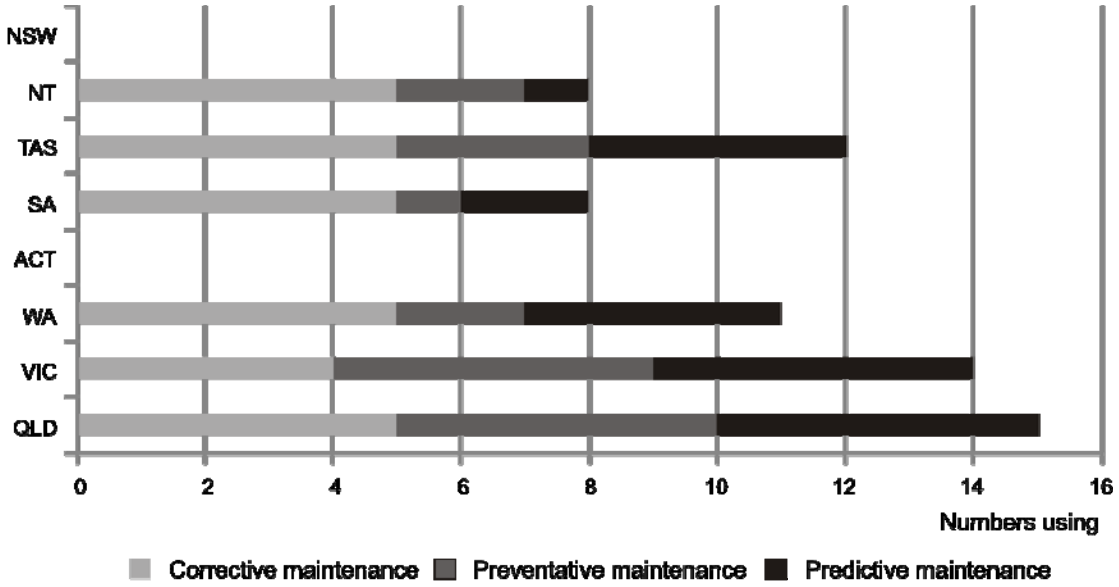
In the context of repairs and maintenance activities, the survey found that SHAs use both desk-top and on-site techniques and maintenance plans varied considerably. For example, a corrective maintenance plan is most widely used (about 63%) for facilities asset management (Figure 28), while preventive maintenance is less used. Information about the frequency of maintenance and repair of dwelling assets indicates that most of the SHAs carry out cyclical maintenance and repairs annually. Table 30 shows the frequency of repairs and maintenance (the ACT did not respond).

Figure 27: Factors considered for dwelling asset condition improvement



Source: Field survey, 2009

Figure 28: Facilities maintenance plans used by SHAs



Source: Field survey, 2009

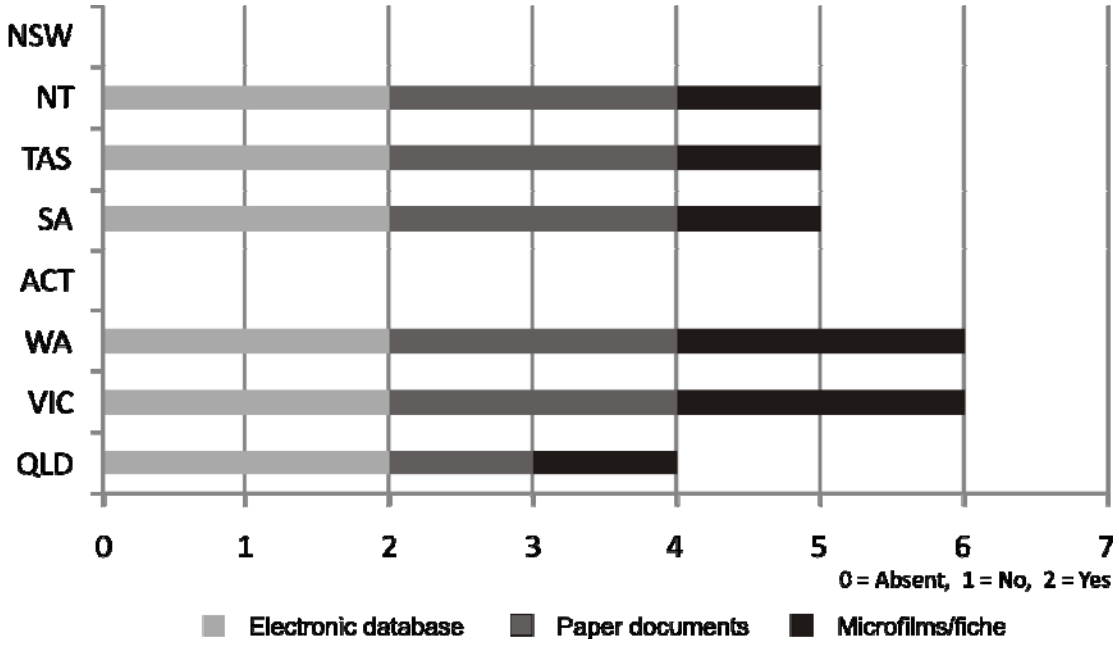
Table 30: Maintenance and repairs

Response frequency	*QLD*	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
Repairs each year	✓	✓	✓		✓	✓	✓	✓
Cyclical maintenance each year	✓	✓	✓		✓	✓	✓	✓

Source: Field survey, 2008. ✓ = present, ✗ = not present, blank = no response or no data

The collection and storage of data assumes more significance when the amount of housing stock held is expressed in terms of data security and storage. The use of modern technology was based on organisational objectives. The public housing organisations have variable guidance and priorities in determining the application and use of software for facilities asset management. For example, some organisations use geographic information systems (GIS) for all (centralised) database applications, while others use varied software in a decentralised form. The survey shows data storage by means of electronic database management system is a more popular technique, followed by paper storage and then microfilms/fiche (Figure 29).

Figure 29: Data storage techniques by housing associations



Source: Field survey, 2009

5.6.1 The suitability of tools and methods

When asked about suitability of tools and measures used for asset management, the majority of participants responded that the tools and criteria for asset management planning and property services are being updated. To date, public housing asset management plans and methods have been used largely on the basis of traditional compliance with the requirements of the asset management planning framework. More information is also presently available on the suitability of tools and techniques for asset management purposes, but there is inconsistency in the information provided by different authorities. Most social housing organisations are unable to benchmark suitability needs across their stocks on a consistent basis that is clear and transparent to all SHAs.

The use of data management systems varied significantly among the organisations (Table 31). GIS are most commonly used, with all reporting that they use them. Two organisations use some other type of automated database. Five use desktop software, such as spreadsheets. Two rely on paper files.

Table 31: Software used for housing asset management

	Housing asset conditions	*Housing asset network*	*Dwelling service life*	*Service performance*
QLD	SAP	Map info GIS		PSI
VIC	HUIP	GIS	ISIP	
WA	BCA			
ACT				
SA	GIS	GIS		
TAS	THIS	Map info GIS		
NT	HOMES	GIS		
NSW	PAS	GIS	LCC	PAS

Source: Field survey, 2009

Blank = no response or no data
THIS = Tasmanian Housing Information System
HUIP = Housing unit information programme
PSI = performance standard index
BCA = building condition assessment
PAS = property assessment survey
LCC = life-cycle costing
GIS = geographic information systems
HOMES= home management system

Predicting future facility conditions seems to be undertaken somewhat more consistently. All but one of those relying on judgment had some type of defined standards against which they assessed and predicted dwelling conditions. Only one said that no forecasts were made.

5.6.2 Overall assessment

Based on the responses to questions about each of the areas of asset management, we can see something of a mix of successes and challenges. Successes include good approaches to defining strategic goals, good data systems and good use of data in evaluation and monitoring. On the side of challenges, strategic thinking may not be getting to the decision stage, as we see financial constraints still widely affect the overall coordination of the agencies.

5.7 Asset management program – implementation

Carrying a strategic approach into program implementation seems to continue to be a challenge for social housing organisations. More than half of the respondents rely on informal or no procedures to coordinate maintenance, repairs and capital programs.

This separation continues in the implementation of housing delivery programs. Respondents said that implementation is often hampered by budgetary processes (or funding mechanisms) and political interference (either relating to priority-setting or to decisions based on social policy priorities rather than asset management priorities).

The private sector is involved in a number of ways in delivering the programs of housing organisations. All use the private sector for construction. Nearly all use private providers of professional services. More than one-third said that private organisations are used as program managers. Three use private firms for data collection. Despite the varied involvement of the private sector, more than a quarter of the asset managers said that the primary method used to deliver their programs was

through public employees. The methods used to contract with the private sector also vary, perhaps reflecting experimentation.

5.8 Monitoring

If the key to good program monitoring is good inventory information, the organisations seem to be in fairly good shape. All respondents had different timelines (Table 32) and standards (Table 33) for monitoring asset conditions. All the respondents said that inventories are updated as needed or on a regular basis. Similarly, if the measure of program monitoring is the use of inventory information to evaluate condition, social housing organisations are doing well. All report that inventories are used in such a manner. Nearly all say they monitor progress toward goals. Seven of the eight SHAs surveyed said that they regularly monitor dwelling conditions and carry out major upgrades as well as maintaining their stock (refer Table 34).

Table 32: Collection of built assets historic data

	QLD	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
History	Yes	Yes		Yes	Yes	Yes	No	Yes
Time period	Over 5–10-years	Over 5–10-years		Over 15-years	Over 10–15-years	Over 5–10-years	No data	Over 5–10-years
History range	All current data	All current data		Some data	Some data	Some data	No data	All current data

Source: Field survey, 2009. Blank = no response

Table 33: Standards for monitoring dwelling conditions

Measures	*QLD*	*VIC*	*WA*	*ACT*	*SA*	*TAS*	*NT*	*NSW*
Property index tool	Yes							
Property condition rating (age, cladding and value of required works		Yes			Yes	Yes		
Condition of construction (building fabric); condition in terms of presentation of property (tenant responsibility)	No	No		Yes	No	No		
Three-weighted criteria: condition, amenity and safety	Yes	Yes			Yes	Yes		
Outer wall–internal wall condition; yard condition; solid hot water heater; basic building data	Yes	Yes			Yes	Yes		

Source: Field survey, 2009. Blank = no response or no data

5.9 Asset manager's interpretation

5.9.1 Asset management role

Asset managers provided definitions and meanings of asset management associated with social housing from financial, operational and policy perspectives of social housing. Their responses show that asset management is not a well-understood concept among those charged with the responsibilities of asset management in social housing. This is not to say that some individuals are not well-informed, but rather that there is great variance in both depth and quality of understanding. This hints at

underlying fundamental problems relating to education, training and knowledge management in the discipline.

Table 34: Major upgrade of buildings by characteristics of dwelling

States	*All dwellings*	*Most dwellings*
ACT	Yes	No
NSW	Yes	No
NT	No	Yes
QLD	Yes	No
SA		
TAS	Yes	No
VIC	Yes	No
WA	Yes	No
Total	6	1

Source: Field survey, 2008. Blank = no response or no data.

> I believe it is about our understanding of our housing portfolio and how we manage our housing assets. It is about service delivery to the people using housing advantages for the people. It is also about protecting government investment (Queensland participant).

The sense of confusion felt by managers about definition comes very clearly through many of the dialogues, as illustrated by the statement:

> Asset management of social housing for us is to collect some data and develop some liveable home standards and to draw ideas from other jurisdictions.
>
> The definition is also to do with asset management as an emerging subject, which has no specific approach around it (South Australia participants).

It is important to note that the difference in interpretation of terms is a fundamental concern with implementing effective asset management policies. It is simply impossible to communicate policy reform effectively if the recipients of the message make a different interpretation of the message.

It is also important to note that this level of misunderstanding in terminology is by no means limited to asset managers in social housing. The research team has experienced this in other domains, such as in local governments, and indeed the research team even had trouble communicating ideas among its own team members – with a divide loosely forming between asset management researchers and social planning/policy researchers.

This same division between asset managers and social planners became evident during the focus groups. It is difficult to point at specific instances, nevertheless it became clear that these two groupings were evident and was an underlying cause for tension around role and priority; they also used terms differently.

5.9.2 Government policy

Asset managers identified various characteristics about prevailing regulation and control, which is mostly dictated by government as the principal financier of social housing. A large number commented that the quality of asset management is often affected by policy from politicians. This means that asset management was not able to

operate to the best of its ability due to constraints placed by historically entrenched funding models or by unrelated (to asset management) policy constraints.

As a result, most housing services are contentious in nature. The following quotations give an indication of the strength of their perception:

> It is the policy and structure of government that determine what we do. Government is structured in different ways. Social housing in South Australia is based on statutory authority – Housing Trust, whereas in other states and territories it is based on government legislation.
>
> It is also a cause of inefficiency (South Australia participant).

In this context, the inefficiency relates to the inability to properly manage the assets. It was a frequent position that current asset management practices were not ideal asset management, but rather the best that could be done under current constraints.

5.9.3 Consistency of standards

A number of SHAs use different standards to manage existing properties. This was done for a range of reasons, including geography, lifestyle and climate. The survey shows there was not strong support for the idea that standards should be common across jurisdictions, yet there was frustration with standards:

> Standards are not up-to-date. Consistency is needed for future projects. We are trying to get the federal and state government agencies to standardise practices to make our operations easier.
>
> It will be nice to streamline contract maintenance jobs, use of hardware and software. There is always confusion … for example, during a recent meeting of all the SHAs' GIS officers, we were unable to adopt a common terminology for an asset database management system (South Australian participant).

In addition to inconsistency in standards that many asset managers described as endemic to service delivery, there are no evaluation metrics for social housing. For instance, one participant described it this way:

> Australia is a large country and housing design and housing stocks is based on climate, culture and lifestyle and between different parts of the country. We also look at the clientele needs and lifestyle. For example Aboriginal people have large families and are likely to treat houses differently … (South Australian participant).

There was also a very strong regionalisation context to standards which would not come out in analysis of normal asset management practices. It was clear that suitable styles of housing varied greatly between regions due to climate and lifestyles.

5.9.4 Best practice

The survey asked the participants the meaning of good practice and if they consider what they do as good practice. According to one of the participants:

> Good practice for social housing asset management is in making sure organisations are targeting the right property for the right program and use the money effectively (Queensland participant).

Their own social objectives and quality of the dwelling stocks, maintenance and repairs impress asset managers and give them a sense of achievement. As the participants from Queensland and South Australia each summed up:

> We have the best asset management system in Australia.

Yet for all that (and almost confirmed by the above statement) there was little awareness of other jurisdictions' asset management practices, nor indeed interest. This perhaps hints again at an underlying concern about training, education and knowledge management in the sector as a whole.

5.9.5 Knowledge of corporate real estate asset management practices

There is a general sense of knowledge among property asset managers about CRE practices, although a clear majority said they do not understand the terminology. All participants had made some attempt to impress the current technical identity on their housing practices. When discussing the adoption of CRE styles of practices:

> Yes, we have (general response).

Individual participants described it in the following ways:

> Yes we have … but it is just a bit complex because we have got a social objective. We have got some databases, inventory and GIS. We have more data than most corporate housing organisations. The techniques and results we have received from corporate consultants is not as sophisticated as what we have in-house.
>
> Also it is hard to say whether the practice between private and public/social housing is different (South Australian participant).
>
> It has been amazing development … we use most of these practices, we use performance metrics, such as what is the percentage of output from development opportunities (Queensland participant).
>
> It is a great term, but we don't do much of it. We have strategies that are driven by political considerations (Victorian participant).

Caution must also be used in interpreting the positive response. While they may think they use advanced management techniques, the confusion about the meaning of terms necessarily means that the responses may be coloured by a failure to understand the question.

5.9.6 The overall perception of asset management practices

For most asset managers, asset management of social housing depend on the organisations' objectives. In terms of actual experiences of practice and performance, there were many examples presented of significant improvement in service delivery. The following are the most valuable issues to emerge from the focus groups that were of this general nature:

- There is a great range of comprehension and awareness of asset management practices among participants.
- There is inconsistency in interpretation of terms.
- There is an interpretation divide between asset managers and social planners.
- There is a sense of frustration at the inability to properly manage assets due to funding or policy constraints.

It is clear from this that consideration should be paid to:

- The domain knowledge of asset management, through training, education and knowledge management.
- The role of asset management in social housing, particularly with respect to social planning.

6 SUMMARY AND POLICY IMPLICATIONS

6.1 Overview

The study proposed to investigate good practice for public and community housing asset management in Australia by:

- Identifying and examining the current state and attributes of asset management practices applicable to social housing in Australia.
- Discussing the key asset management issues and questions arising from international experience with social housing asset management.
- Identifying the set of characteristics associated with best practice applied to social housing asset management in Australia.
- Reviewing the literature and policy debates as they relate to the topics that emerge from each of the above objectives.

All of these issues have been investigated directly from the viewpoints and experiences of social housing organisations, and supplemented by the perspectives of asset managers.

The review of literature relating to asset management in public housing internationally was disappointingly brief. There is indeed a dearth of literature looking specifically at asset management strategies and practices for social housing. Thus, while the literature describes housing stock in some detail, as well as the trends and major policy drivers that entails, little can be said about the detail of the mechanics (practices) of asset management. The international literature is broadly of two types: empirical studies and policy reports. Certainly it is possible to conclude that the range of priorities and approaches is as varied as the jurisdiction involved and that there is no magic bullet extant in the literature to be applied in Australia. There is no best practice model to be adopted. Rather, there is comfort about the existing directions in Australia, and support to move further.

The study has described a variety of practices and policies in the social housing sector, and has captured a mix of local and international housing practice literature. The study noted that there is limited literature on the financial and physical practices of social housing asset management. However, the range of practices, policies and implementation vary from place to place.

The ideas that the study raises are structured in terms of the levels of good practices: lack of definition of asset management, inability to differentiate policy from governance of asset, inconsistency in funding, and political interference in social housing asset management. The conclusions drawn from the study have a number of essential implications for housing management.

First, asset management in social and community housing is inconsistently understood and diversely applied. Across the government jurisdictions in Australia, practices vary considerably and, more importantly, understanding of practices and terms is also variable.

There is a broad appreciation of the need for assessment of public housing asset conditions and practices with regard to housing stock. Some housing organisations have only partly applied traditional asset management procedures, while others are already beginning to apply the market-oriented principles associated with strategic asset management and corporate real estate.

Yet, there is little literature that focuses specifically on asset management in social and community housing to back-up the asset manager. This study therefore provides the starting basis for improving the systematic application of good practice in asset management. It explores the themes of good practices for asset management and the principles of strategic asset management and corporate real estate management in the delivery of social housing services in Australia. This allows examination of the challenges facing asset managers, as well as the factors that are driving policy interest in these issues, and the contemporary approaches to addressing them.

These findings are elaborated below.

6.2 Best practices

During the past decade, broader issues of social housing asset management practices have emerged as the centerpiece of federal, state and local efforts to improve the delivery of housing services. The researchers believe that social housing asset management should develop processes and procedures to identify good facilities management practices and propagate them across the social housing sector. Without these processes, the transfer of best practices is unlikely to occur, thus reducing significantly the effectiveness of efforts to improve financial and technical management of public housing.

The good practices identified by the researchers are listed below:

- A system for collecting and categorising real property inventory.
- A valid engineering-based system for assessing facility conditions with adequately trained personnel and multiple levels of review.
- Prioritised budget allocations based on physical conditions, mission relevance, life-cycle costs and budgets.

Service delivery procedures and budgeting systems are inconsistent across the sector.

6.3 Efficiency

Process reforms are needed to ensure more efficient use of limited resources and to improve the quality of outcomes.

6.4 Skills and culture

It is clear that there are inadequate skills present in the sector. This is consistent with it being an emerging field. Knowledge of terminology and practices is inconsistent and generally poor. That is not to say that individuals are not very well-informed and highly competent, far from it, but generally across the sector there is a problem of awareness of detail.

This is not at all surprising, as asset management is a poorly structured and poorly defined field which confuses most, even experts. In particular, it may be approached from many standpoints, with definitions and strategies differing for each. Nevertheless, to improve asset management in social housing generally in Australia, a greater effort must be made to define terms, and to apply consistent practices. This likely needs education, training and better knowledge management. There would also be benefit from jointly working with private-sector practitioners, and greater use of shared services with other authorities.

6.5 Role of asset managers

The role of the asset manager appears subservient to policy makers in this heavily political field. This is probably appropriate; however, (as in commercial real estate management where obtaining a voice at the board level is extremely difficult) without an appropriate structure and governance, asset management can never perform to its best if subjected to constantly changing contexts, funding and decisions.

It is clear that asset managers would often do things otherwise, were they free to do so. In other words, they know that better practices might be applied – but can't see the point or the possibility in the context of current policy.

It is difficult to explore these issues further without taking a different approach to the research—and this should be the subject of further research—that of exploring individual knowledge and attitudes toward asset management practices.

6.6 Asset management practices

Recent studies on the effectiveness of asset management practices in social housing have recognised the importance of establishing facilities managers' perceptions on quality of services provided (Vanier & Danylo 1998). In common with the subjects of the study, the most important attributes of social housing asset management, which emerge in the interviews with social housing asset managers, are the meanings of asset management of social housing, physical conditions, finance, government policy/control, corporate real estate asset management and cooperation. The participants identified that asset management is obscure in many organisations and their work was often of questionable significance (compared to policy).

The survey of public housing organisations shows that, while the procedures for decision-making and service delivery vary by state, the hardware and software (technology) used for service delivery are frequently similar in functionality. The combination of procedures and technology in asset management plays a major role in service delivery. Because of the lack of coordinated research, many states have implemented their own asset management practices, which, although scattered, are often based on a single type of infrastructure or mode (Switzer & McNeil 2004). With the exception of financial practices, physical condition surveys and repair services are the most frequent practices of asset management.

The relationship between technology, decision-making and the effectiveness of service delivery, focuses on the definition of asset management and management practices used that are generally included under the broad heading of asset management. This includes geographical information systems (GIS), computer-aided design (CAD) systems and relational database management systems that provide an accurate picture of the extent of an asset management portfolio (Vanier 2001). GIS are becoming extremely popular with housing organisations to manage land information such as lot plans. In GIS, the data about a particular asset are directly related to their physical location on a map (Guler & Jovanovic 2004; Vanier 2000). For example, many states surveyed have introduced one form of GIS to publish information regarding their property information or dwelling stocks. There also exist a large number of computerised maintenance management systems across the social housing sector. For example, CAD systems can also provide sources of asset management information for technical and engineering management (Sly, 1999). Dimensional information, such as areas and lengths can be extracted from CAD drawings, and the drawings provide up-to-date information about the extent of the portfolio (Vanier 2001). In addition, relational database applications can be adapted to GIS software to record asset information to meet the data-handling needs of asset

managers (Vanier 2001). Some of these systems are used for data collection and storage, while others are used for performance measurements. For example, the Department of Housing Queensland uses a property index.

6.7 Funding models

Not enough money is spent on maintenance and repair; public housing organisations are accumulating an ever-increasing backlog and maintenance deficit, which leads to premature failures. Funding models constrain the asset manager from remedying this situation. Even the new funding from the federal government's $6.4 billion *Social Housing Initiative*—part of the *Nation Building – Economic Stimulus Plan*—will not solve this problem for all states. In some jurisdictions it may exacerbate the situation, as funding new dwellings without providing for past and future maintenance shortfalls may be creating another conflict between good asset management and social planning.

6.8 Asset management practice and trends

Management of public sector assets can generally be said to represent 'good' current practice in asset management. However, while the common use of strategic asset management plans allows managing assets to meet organisational objectives, frequently the actual asset management strategies noted in an organisation's documented plans are internally focused on the detailed operation of the assets and not on the business of the organisation.

Good strategic asset management is most frequently practised at technical, operational levels where issues like maintenance, condition assessments, and capital budgeting for new works predominate thinking and practice. These are not unimportant but it is observed that practice generally occurs despite relatively poor framing of the organisations' business strategies.

The dominance of the technical issues identified occurs because asset managers, while knowledgeable in managing physical assets, lack sufficient 'business' perspective to successfully carry this out. Technical folk tend to be focused on 'bricks and mortar' issues.

Best practice asset management must surely be framed with stronger and better connections between operational strategies and business strategies. The transition from good practice to best practice requires, in the first instance, development of appropriately useful models, and second, the implementation of these in practice.

There is growing awareness of strategic and corporate asset management models within the Australian social housing sector, but there is a general lack of understanding of terms and there is difficulty in seeing past immediate technical issues toward implementation of the newer strategic approaches.

6.9 Facilities management and strategic real estate practices

Our survey found that some authorities are using many systems with common features to collect and maintain housing data. There was evidence that:

- Some housing authorities are placing too much emphasis on the overall quantity of stocks ahead of practice and decision-making considerations, such as the quality of the stocks.
- Some departments are using incompatible methods in data collection, operation and housing maintenance.

- → Asset management frameworks are similar in many ways and incorporate a list of strategic principles.
- → Some organisations intend to introduce asset registers and modern database management systems.

The use of modern technology was based on organisation objectives. The public housing organisations have variable guidance and priorities in determining the application and use of software for facilities asset management. For example, some organisations use GIS for all (centralised) database applications, while others use varied software in a decentralised form.

Public housing organisations tend to define asset management as data systems, as opposed to management processes.

6.10 Confusion in role definition for asset management

Perhaps the most contentious finding of this research is that a polarisation of views emerged, particularly from the qualitative analysis. Two underlying viewpoints (belief structures) can be observed. While care must be taken with this finding, as the research was not designed to measure viewpoint, it is important to establish the context of participants in their understanding, knowledge, terminology, beliefs and practices, in order to make sense of the overall problem of inconsistency in asset management in social housing. Thus, the following identification is in some ways the most important finding of the project.

It was found that respondents were influenced by two underlying contexts: governance versus policy. This appears to emerge from the background context of individuals and whether they are trained in physical asset management or alternatively in social policy. The two extremes may be described as follows.

6.10.1 A governance view

The governance perspective is that the role of the asset manager is to preserve the value of an asset. Thus responsibility is toward society's wealth and it is necessary to maximise value and minimise waste. In this view, it is important to maintain assets and ensure that their ability to provide service is preserved until the asset is no longer required, at which time maximum asset value may be realised. In this view, service delivery becomes a utilisation problem, where an underutilised asset represents waste. Treasury rules for assets may drive or support this approach.

This viewpoint is often termed a *bricks and mortar* approach, and is derived from classical training in facilities or asset management, often with an engineering, building or architectural background, and is most typified by the approach of IPWEA (2006) – with layers of asset management from core (registers, condition, risk, utilisation, value) to *advanced* (life-cycle, service level, cost-benefit analysis, strategic planning).

This view is driven by the role of governance of the asset in the organisation's performance. It is often in conflict with policy makers who *overemphasise* politics and social policy, making changes which prevent good management of their assets.

6.10.2 A social policy view

The social policy perspective is that the role of the asset manager is to provide the facilities required to deliver service. Thus responsibility is toward society's service provision and it is necessary to maximise service delivery and minimise waste. In this view, it is important to utilise assets in service delivery and ensure that their ability to provide service is not compromised by poor maintenance, inappropriate location or poor suitability. The asset has no intrinsic value except where that value may be

released to enable better service delivery. In this view the dwelling becomes a suitability problem, where an unsuitable asset represents waste.

This viewpoint may be termed a *housing* approach, and is derived from training in social policy or community service, often with a non-technical engineering, building or architectural background. It is primarily concerned with minimum standards, design (relating to lifestyle), tenant mix, safety and community wellbeing.

This view is driven by the role of providing housing for the community. It is often in conflict with asset managers who *overemphasises* the role of the asset, and in particular, maintenance costs.

6.10.3 Balancing the views

It is unlikely that asset managers within social housing organisations would stand entirely within one of these viewpoints. Yet, they will bring to any analysis their underlying viewpoint. This will come in the form of:

- Communication: using different terminologies to describe asset management and, equally, understanding different meanings from the same terminology. This has the consequence that participants in a meeting can agree on a course of action, using common language, but intending quite different action.
- Action: priority will be placed on the role as understood from their viewpoint. Thus, it may become difficult to manage a team toward a set of common goals. Also, the valid actions will vary in any given situation.
- Performance: measuring performance from within a viewpoint can miss the point of strategic objectives where there is a mismatch. Similarly, interpreting measurements from the wrong perspective may lead to misapprehension.

It is important to recognise both viewpoints as being valid in themselves, and then to build an asset management environment which can bridge the two. Thus, asset management policy should be designed in explicit recognition of each and should provide the language, tools and techniques valid to both approaches.

6.11 Conclusion

This project has a large scope and many different aspects and viewpoints. It has described the international and domestic treatment of social housing asset management, and along the way identified that practices are very variable and implementation inconsistent.

Social housing in Australia would benefit from a new approach to social housing asset management, with consistency in approach across all jurisdictions, and with a well-defined knowledge base not dominated by one particular perspective, but accommodating both.

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APPENDIX/APPENDICES

Appendix A: Income stream value, rent charging policy, and asset strategy development

The income stream valuation of a dwelling is the product of its discounted net income stream plus its discounted final valuation. Mathematically, the income stream valuation of a dwelling can be represented by the formula:

$$ISV = \sum_{t=1}^{n} \frac{R_t - E_t}{(1+i)^t} + \frac{RV}{(1+i)^n}$$

- Rt = rent per period.
- Et = expenditure per period (maintenance, administration etc).
- n = number of periods the dwelling is let out (usually years).
- RV = residual value (the value at the end of the letting period).
- i = the discount rate.

The total income stream value can be obtained by adding all of the outcomes for all of the dwellings in the portfolio.

Appendix B: Detailed financial analysis – scope

This section presents a quantitative and qualitative analysis of financial indicators in Australian jurisdictions.

Quantitative: operating

Where the information was available the standard quantitative operating analysis documents for the period 2005/06:

1. Asset management expenditure per owned dwelling.
2. Total asset management expenditure per dwelling and compared to total operating overhead expenditure per dwelling (salaries and admin).
3. Unplanned or responsive and planned maintenance expenditure per dwelling and total maintenance expenditure per dwelling.
4. Total asset operating expenditure (management and maintenance) and compared to total operating expenditure.
5. Management asset operating expenditure analysis, including:
   - Condition assessment as a percentage of total asset management expenditure (TAM).
   - Life-cycle costing expenditure as a percentage of TAM.
   - Other asset management expenditure as a percentage of TAM.
   - TAM as a percentage of total overhead operating expenditure.
   - TAM as a percentage of total asset operating expenditure.
   - TAM as a percentage of net income.
6. Non-management asset operating expenditure analysis including:

- Unplanned or responsive maintenance expenditure as a percentage of total maintenance expenditure (TM).
- Planned or cyclical maintenance expenditure as a percentage of TM.
- TM as a percentage of total operating expenditure.
- TM as a percentage of total assets.
- Total asset operating expenditure (TAO), as a percentage of total operating expenditure.
- TAO as a percentage of net income.
- Net interest payments for asset purchase as a % of asset value.

In a number of cases jurisdictions were unable to provide disaggregated asset management expenditure and/or some information relating to 2003/04 was also unavailable. In these cases analysis has not been provided on these components.

Quantitative: capital

Where the information is available the standard quantitative capital analysis documents for 2005/06:

7. Stock numbers, including the annual program of:
   - spot purchases
   - buildings and constructs
   - total acquisitions
   - improvements
   - redevelopments
   - demolitions
   - dwellings sold
   - net new dwellings.
8. The proportion of the total asset expenditure program devoted to acquisitions, improvements and redevelopments by stock numbers and total expenditure.
9. Average capital cost of acquisitions per dwelling including transaction costs.
10. Average capital cost per dwelling of upgrading and redevelops including:
    - upgrading
    - redevelopment
    - neighbourhood improvement
    - total average capital cost for upgrading and redevelopment
    - average working expenses capitalised (where appropriate).
11. Average disposal costs and profit or loss per dwelling.
12. Where possible, the estimated cost of the deferred maintenance backlog, future lifecycle costs and asset loan principal outstanding.
13. Some asset performance indicators including:
    - Deferred maintenance as a multiple of annual total maintenance.
    - Deferred maintenance as a percentage of current asset value.

- Future life-cycle costs as a multiple of annual upgrade and improvement expenditure.
- Future life-cycle costs as a percentage of total dwelling asset value.
- Outstanding loan principal as a ratio of asset value.

Qualitative

The qualitative analysis deals with asset managers' responses to the questionnaire and summarises the main characteristics and components of the agencies':

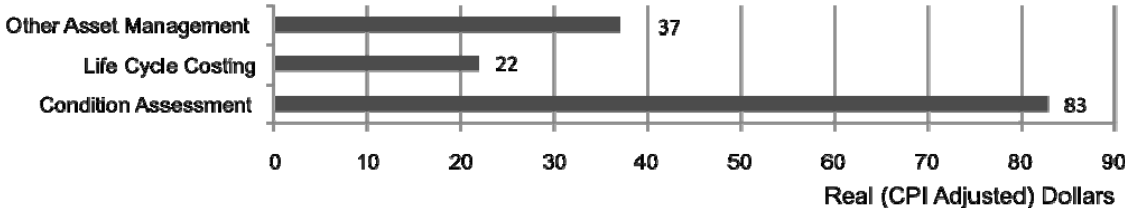
- Asset management development.
- Existing financial procedures for asset analysis.
- Current practices for asset financial performance measurement and asset financial performance indicators.

Appendix C: Financial attributes: New South Wales, (NSW).

Components of average asset management expenditure

Figure 30 sets out the average expenditure per dwelling on the different components of asset management.

Figure 30: NSW: components of asset management expenditure per dwelling, 2005/06: (June 2006 dollars)



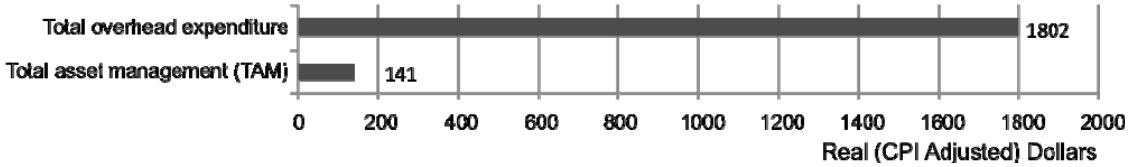
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/06, departmental expenditure on asset management components totalled $83, $22 and $37 per dwelling, for condition assessment, life-cycle costing and other asset management respectively. These components comprised 58.7%, 15.2% and 26.1% respectively of total asset management expenditure.

Comparative average asset management expenditure

Figure 31 sets out the total average asset management expenditure, per dwelling, (TAM), and as a component of total average overhead expenditure per dwelling.

Figure 31: NSW: Total average asset management expenditure per dwelling, 2005/06: (June 2006 dollars)



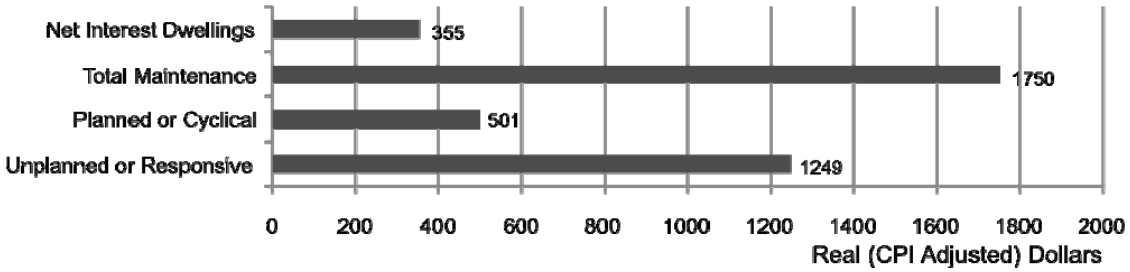
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Average asset management expenditure per dwelling totalled $141 in 2005/06 which represented just 7.85% of total overhead expenditure, but still increased by 160% over the period 2003/04 to 2005/06.

Components of average asset maintenance expenditure

Figure 32 provides the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by the NSW Department of Housing.

Figure 32: NSW: components of average asset maintenance expenditure per dwelling, 2005/06: (June 2006 dollars)



Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

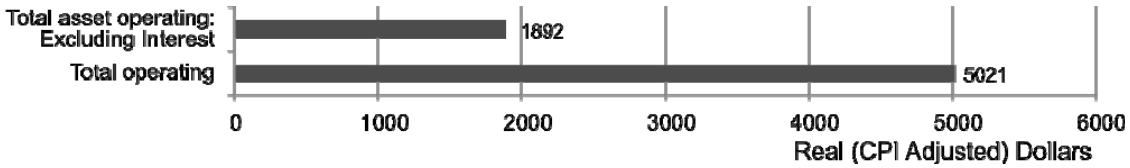
Unplanned or responsive maintenance averaged $1249 in 2005/06 while planned or cyclical maintenance cost an average of approximately $500 of the total average maintenance cost per dwelling, (TM), of $1750. These two main components of maintenance cost represented some 71% and 29% respectively of total average maintenance costs per dwelling.

Real unplanned maintenance increased some 17.5% between 2003/04 and 2005/06 with real planned maintenance increasing by just 5.4% over the same period.

Comparative average total asset expenditure

Figure 33 sets out the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 33: NSW: total average asset operating expenditure per dwelling: 2005/06: (June 2006 dollars)



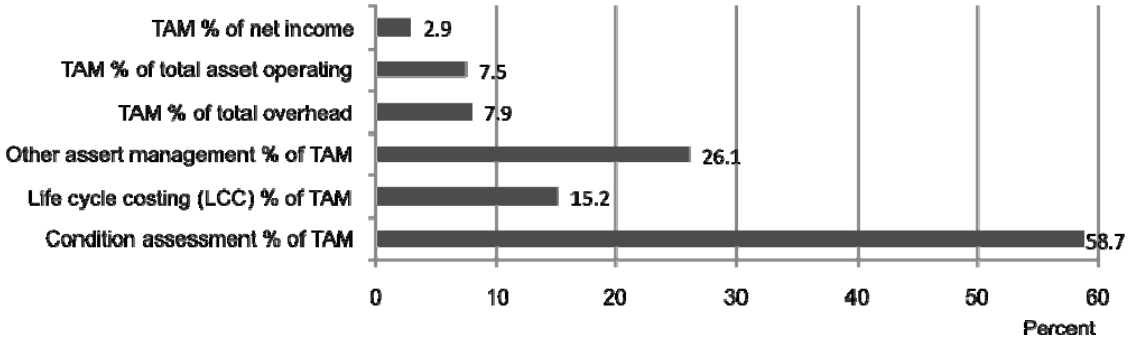
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/05 total average asset operating expenditure per dwelling totalled $1892 representing some 38% of total average operating expenditure and TAOE grew by some 18.7% over the period 2003/04 to 2005/06.

Asset management expenditure: a summary of some indicators

Figure 34 provides a summary of the main indicators of asset management expenditure.

Figure 34: NSW: percentages of asset management expenditure per dwelling and some indicators: 2005/06, (June 2006 dollars)



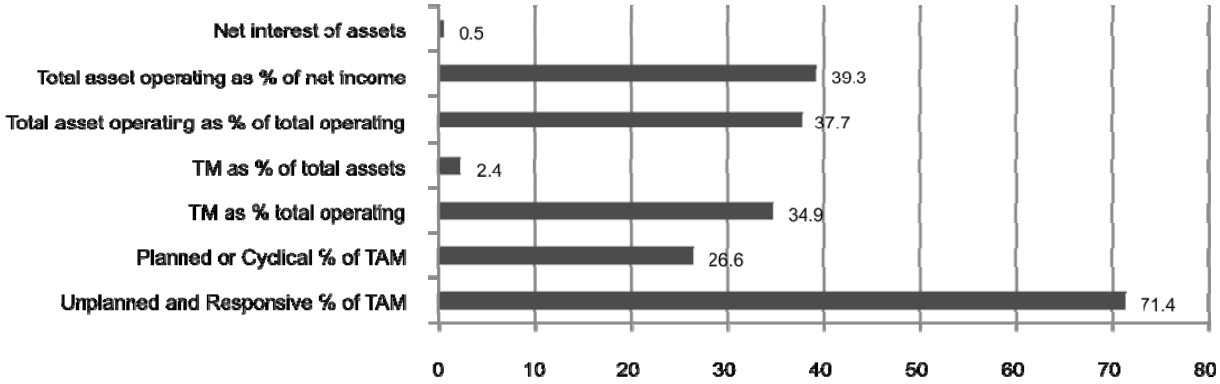
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

TAM currently comprises just 7.9% of total overhead, 7.5% of total asset operating and some 2.9% of net income per dwelling respectively.

Total asset expenditure: a summary of some indicators

Figure 35 provides a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 35: NSW: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06, (June 2006 dollars)



Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

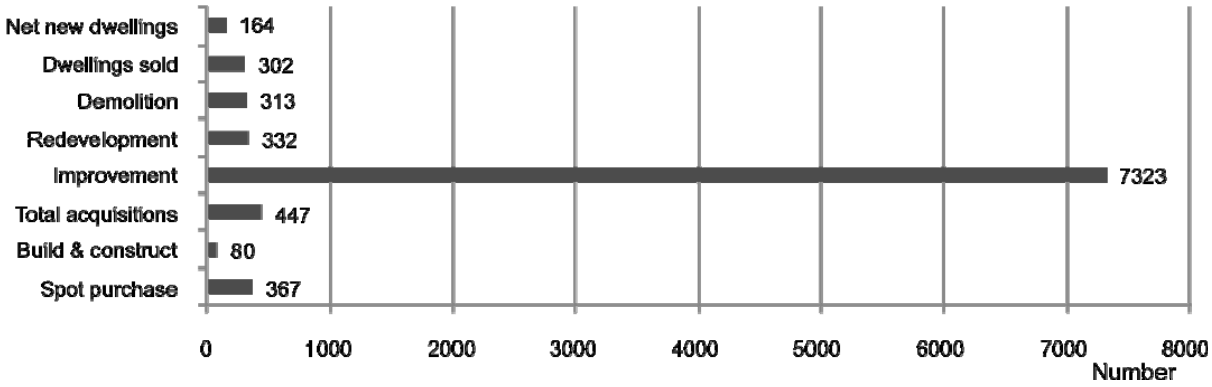
The graph shows that total maintenance represents more than a third of total operating expenditure (excluding depreciation and net interest) but just 2.4% of total assets. TAOE represents some 37.7% of total operating expenditure and approximately 40% of net income, while net interest costs are relatively low at just 0.5% of total assets.

Quantitative: capital

Stock adjustments

Figure 36 sets out the numbers of stock subject to spot purchase, building and construction; improvements; redevelopments; demolitions; and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Figure 36: NSW: stock adjustments: 2005/06: numbers



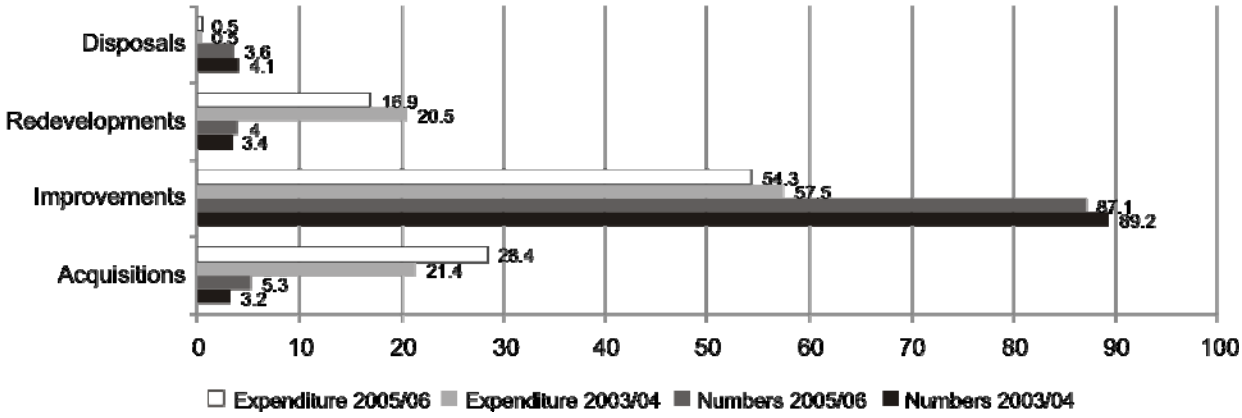
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Approximately 450 dwellings were acquired in 2005/06 and 302 dwellings sold for a net increase of 164 dwellings. By far the largest component of the program by both numbers and expenditures related to improvements with over 7,300 dwellings subject to a substantial refit in this year. Redevelopment of existing stock was also a major priority with some 332 dwellings being redeveloped and 313 dwellings being demolished.

Capital profile

Figure 37 sets out the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction), improvements redevelops and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelopment program).

Figure 37: NSW capital profile 2005/06: proportion of total asset program absorbed by program components: stock No's and real expenditures: June 2006 dollars



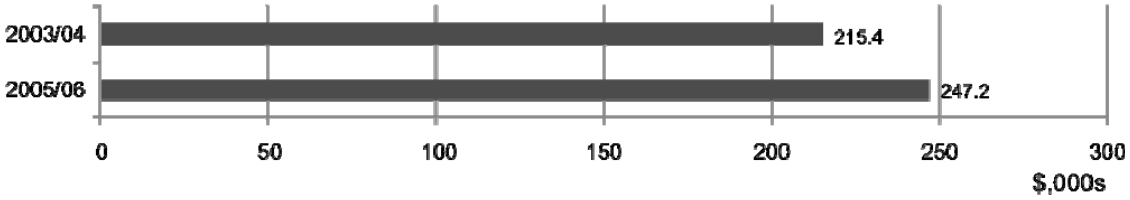
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Figure 37 demonstrates the absolute primacy of the improvements program which constitutes nearly 58% of all dwellings and 54% of all expenditures in the asset programs. However, over the period 2003/04 there has been a significant resources shift to redevelopments which constituted only 3.4% of all dwellings and 4% of all expenditures in 2003/04 and in 2005/06 made up 20.5% and approximately 17% of all dwellings and expenditures respectively in the asset programs.

Acquisition costs

Figure 38 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchases and building and construction programs.

Figure 38: NSW: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars.



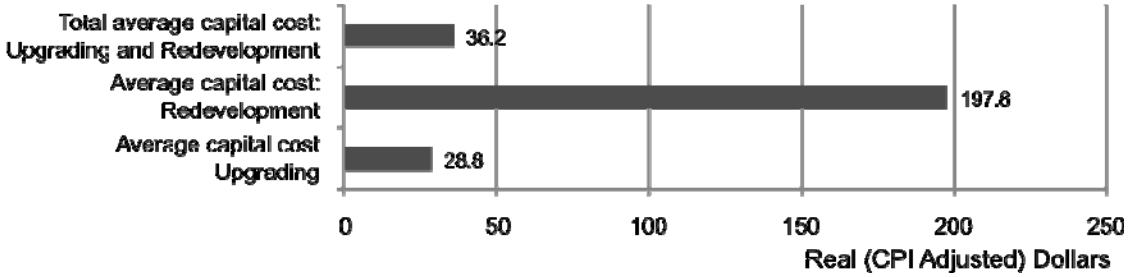
Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

The real average capital cost per dwelling of acquisitions has grown from $214 000 in 2003/04 to $247 200 in 2005/06 or by 14.7%.

Upgrading and redevelopment costs

Figure 39 sets out the real average capital cost per dwelling of upgrading and redevelopment. This section of the analysis also sought information on the average cost of neighbourhood improvements and expenses capitalised to projects. In NSW's case the cost of neighbourhood improvements was unable to be disaggregated and no expenses were capitalised to projects.

Figure 39: NSW: dwelling upgrades and redevelops: real average capital costs per dwelling: $000s: June 2006 dollars



Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

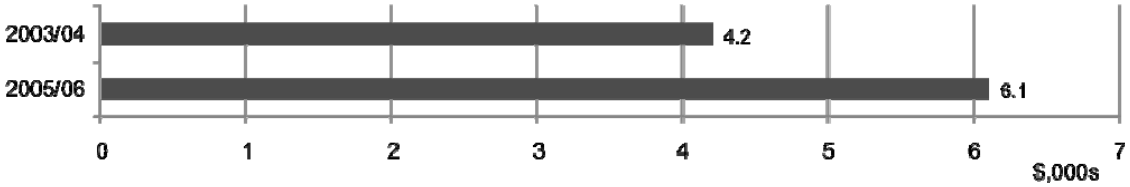
The average real capital cost per dwelling of upgrades and redevelopments was approximately $29 000 and $198 000 respectively, having increased by 38% and 1.7% respectively over the period 2003/04 to 2005/06.

Disposal costs and profit or loss

NSW Housing did not supply any figures on profit or loss. Figure 40 provides the real average disposal cost per dwelling of in 2005/06.

Real average disposal costs per dwelling grew from approximately $4200 in 2003/04 to $6100 in 2005/06 or by 46.7%.

Figure 40: NSW: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

SHAs were asked to provide quantitative information on the estimated dwelling portfolios':

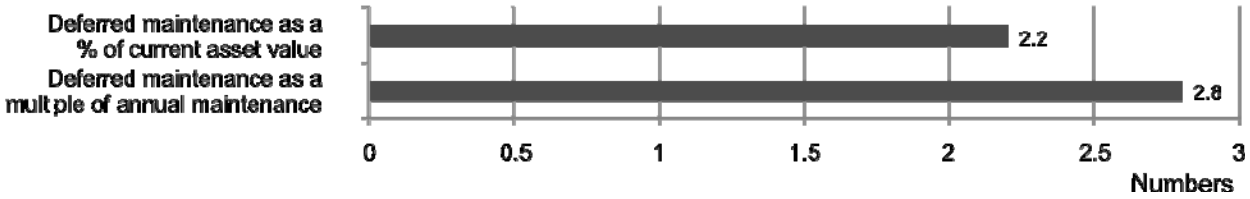
- deferred maintenance backlog
- future lifecycle costs
- asset loan principal outstanding.

NSW estimated its deferred maintenance backlog as being approximately $600 million in 2005/06 but were not able to supply information on the other two components of liability analysis.

Some performance indicators

Figure 41 shows that in 2005/06 deferred maintenance is approximately 2.8 times the cost of the current maintenance program and represents 2.2% of dwelling asset value.

Figure 41: NSW: asset management capital: some financial performance indicators



Source: NSW Department of Housing (NSW DoH), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Qualitative

Asset planning: development

The Department of Housing NSW is well advanced in its development and implementation of asset planning. It has a strategic asset plan, a capital investment strategic plan, a maintenance strategic plan and an asset disposal strategic plan.

As stated by the Department the main objectives of asset planning are to:

- Reconfigure assets to meet the needs of current and proposed client groups, while providing flexibility to deal with changing circumstances.
- Improve residential amenity.
- Promote regeneration of estates.
- Optimise the value of the portfolio, including unlocking value.
- Provide a context for cost-effective maintenance activities.

Local asset management plans (LAMP) are prepared by each of the four public housing divisions covering the state. These involve our staff assessing each individual property for retention, disposal, upgrade or redevelopment based on the directions set in the higher level plan (LTAP) and the particular circumstances facing the Division and the local management team.

Through its planning the Department has identified an ideal dwelling mix.

Asset planning: financial criteria and assessment

Housing NSW has been able to develop an understanding of the requirement for maintenance by being able to calculate the liability through the development of a life-cycle model for the whole portfolio. (DoH, 2008, pp.2–3)

The choices between holding, upgrading or disposal are driven by service planning, with most other factors subsidiary to this. The running costs of particular properties, the place in asset life-cycle terms of major components, the property condition and its general amenity, value and replacement costs, redevelopment potential, and so on, all play a part in the reaching of a decision regarding future use. (DoHNSW, p.4).

The Department is also seeking to introduce universal assessment of decisions at the different planning levels. LAMP will have economic appraisals, grouped asset plans and capital projects will have financial feasibilities.

As yet the Department does not use probability analysis to assist in its asset choices.

Asset analysis

Housing NSW (DoHNSW) conducts both condition assessments and has developed a sophisticated life-cycle costing model.

The key process conducted by NSW in which both these elements play a part is the maintenance reform program (MRP). A summary of the details of the program are outlined below.

The maintenance reform program is an approach based on five key ideas:

- → Using asset performance to guide intervention.
- → Using component life-cycle planning to formulate forward programs.
- → Optimising a planned and systematic intervention pre-empting component failure.
- → Bundling the work.

At the core of the new approach is a property assessment survey that provides information on asset performance (safety, function and appearance plus amenity), work required (cost estimate, trade and type of work) plus identification of items estimated to require attention within the next 5-years. The survey judges asset performance against the benchmark of the Department's Asset Standards Version 4.

Together with its predictive modelling and historic failure patterns the Department can produce an annual compendium of works that has five streams:

1. Annual dwelling service.
2. Annual service.
3. Annual life cycle quota.
4. Annual schedule of works.
5. Annual responsive allowance.

Annual service is all the items that require regular and predictable servicing bundled to form a complete service for items such as common area lighting, lawns and gardens, lobby cleaning, and so on.

Annual life-cycle quota is a set of components whose replacement can be anticipated through a combination of life-cycle planning and survey data. The predictive model, PALM, provides the number of items to be replaced each year for any part of the portfolio. Confirmation of replacement is by the survey. This applies to roof gutters and downpipes, external and internal painting, kitchen cabinets, and so on. It is the predictive model that has enabled the Department to determine the annual requirement of the asset base.

Annual schedule of works is the work not included in the annual dwelling service or annual life cycle quota and which represents items that fail, or are predicted to shortly fail, to meet the Department's asset standards.

The annual responsive allowance is the volume of work expected to be required as a result of call-outs from tenants, staff and contractors. This is administered through a schedule of rates with protocols remaining the same as present. As a result of the systematic inspection of dwellings it is expected there will be an initial rise in the number of urgent responses as unsafe items are discovered. However, once the properties have been brought to standard and the regular inspection approach established, this is expected to stabilise at a rate half that of the current level.

This total compendium of works becomes the maintenance program, organised by property but easily sliced and diced by component, failure type, and so on. The maintenance program extends over 4-years, with the allowances for the annual dwelling service, the service stream and the responsive remaining the same. For the life-cycle quota only the first year and some of the second year are initially identified in detail. The remainder of the second year and years three and four are set out as numbers for each component category but with the actual properties to be identified through the on-going survey process (MRP, 2005 pp.1–3).

Valuation, property assessment and life-cycle analysis costing issues

Valuation: To undertake the valuation on the scale required to cover the complete portfolio would cost in excess of $40 million. Taking a representative sample from each market, having them valued and then extrapolating across the portfolio brings the cost down considerably.

The benchmark properties approach involves nominating around 3,000 properties and requesting qualified valuers to estimate the property value and market rent value. These 3,000 properties become a reference matrix of 18,000 valuations. These are linked to equivalent properties in each area.

A set of values for total property, the land, and the rent for a property is provided as part of a matrix by registered valuers after visiting a nominated benchmark property. The values cover the benchmark property as it stands plus variants to ensure all bedroom categories are covered in the matrix. (True Market Rent 2007, p.10)

A full property assessment survey of the whole portfolio costs approximately $10 million.

The life-cycle costing program cost four people for six months, two senior asset managers and two senior IT plus associated overheads. It can be anticipated that development costs would be in the order of $600 000 to $1 000 000.

In addition the new approach to asset management to some extent 'mixes up' the traditional approach categorising expenditures by recurrent costs and capital. For that

reason a new accounting approach has been required to be developed which allows for both transparency and accountability.

The Department has not undertaken any income stream analyses.

Asset management

The Department outsources its maintenance management, but it is too early to tell how efficient the new approach will be.

Maintenance requirements have now been redefined to mesh with the MRP and there are four main definitions:

- Responsive – no discretion to defer or plan systematically urgent and breakdown.
- Planned – able to be bundled non-urgent.
- Life cycle-quota – replacement of items.
- Schedule of work – repair of items.
- Service – regular pre-emptive checking/ repair/ replacement as required.

Responsive maintenance continues to grow at the expense of planned maintenance but this is expected to change as the MRP develops.

The DoHNSW has embarked on a major asset restoration program and this is now 8-years-old and has been replaced by the MRP.

Financial performance indicators

NSW Housing uses the following financial performance indicators (Table 35).

Table 35: NSW: financial performance indicators. Asset management

Area	*Indicator*
Financial return	Yield
Financial performance – short-term	1. Rents written off as % of rents payable. 2. % of maintenance funds spent on responsive versus planned.
Financial performance – long-term	3. NPV of income stream for some projects. 4. Market value.
Financial performance – efficiency	1. Cost per person housed. 2. Average maintenance costs per dwelling.

The Department does not calculate economic loss.

Appendix D: Financial attributes: Northern Territory, (NT).

Quantitative analysis: operating outcomes

Components of average asset management expenditure

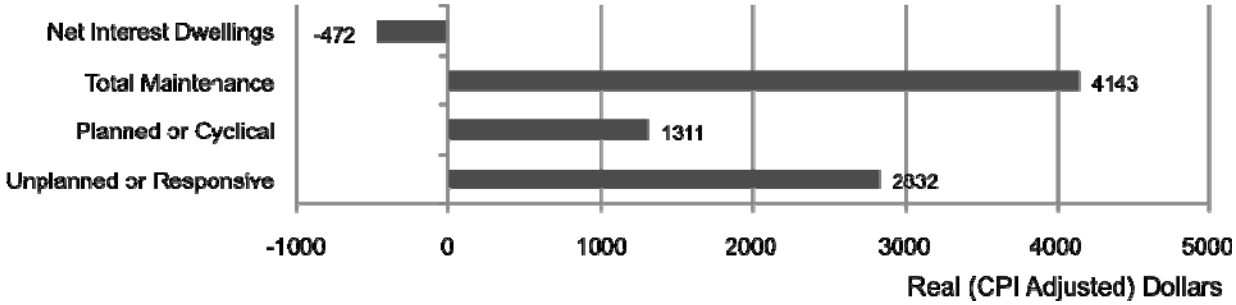
Territory Housing was unable to supply information on their asset management expenditure.

Components of average asset maintenance expenditure

Figure 42 sets out the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by Territory Housing.

Unplanned or responsive maintenance averaged $2832 in 2005/06 while planned or cyclical maintenance cost an average of approximately $1311 of the total average maintenance cost per dwelling, (TM), of $4143. These two main components of maintenance cost represented some 68% and 32% respectively of total average maintenance costs per dwelling.

Figure 42: Northern Territory: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars



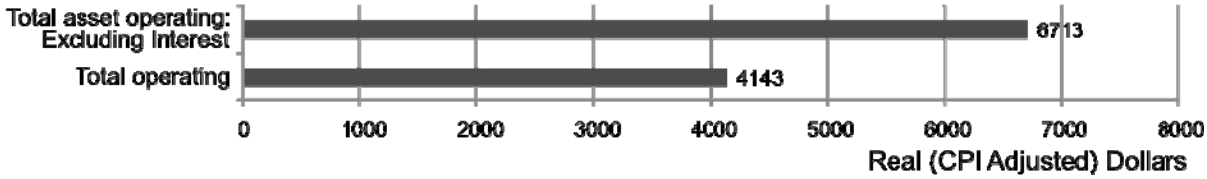
Source: Territory Housing, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Real unplanned maintenance fell by some 13% between 2003/04 and 2005/06, and there was no planned maintenance expenditure in 2003/04.

Comparative average total asset expenditure

Figure 43 provides the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 43: Northern Territory: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars



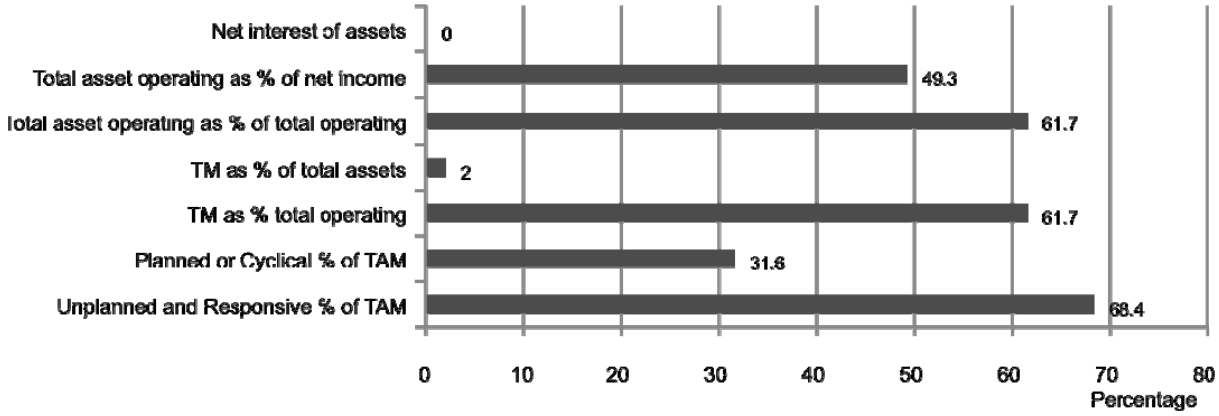
Source: Territory Housing, Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/06 average asset operating expenditure per dwelling totalled $4143 representing some 62% of total average operating expenditure and TAOE grew by some 27.1% real over the period 2003/04 to 2005/06.

Total asset expenditure: a summary of some indicators

Figure 44 sets a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 44: Northern Territory: per cent of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



Source: Territory Housing, Special Spreadsheet Return to AHURI Asset Management Project, 2008

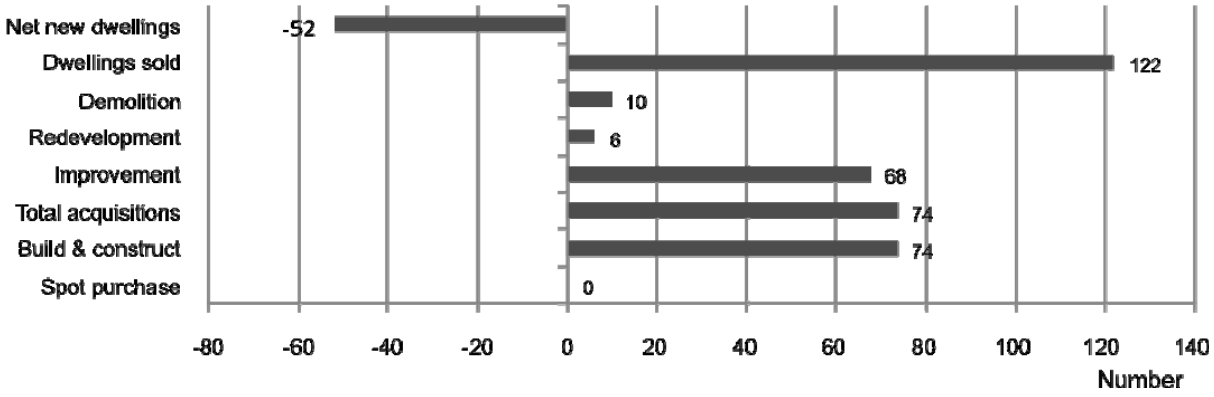
The graph shows that total maintenance represents more than 61% of total operating expenditure (excluding depreciation and net interest) but just 2% of total assets. TAOE represents some 61% of total operating expenditure and approximately 50% of net income while there are no net interest costs.

Quantitative: capital

Stock adjustments

Figure 45 sets out the numbers of stock subject to spot purchase, build and construct; improvements; redevelopment; demolitions and dwelling sold for the year 2005/06.

Figure 45: Northern Territory: stock adjustments: 2005/06: numbers



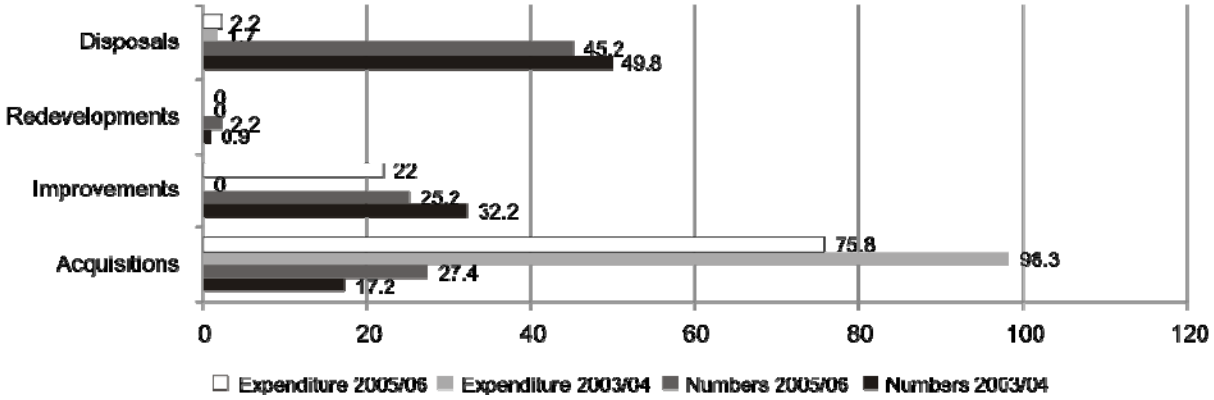
Source: Northern Territory, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Approximately 74 dwellings were acquired in 2005/06 and 122 dwellings sold for a net loss of 52 dwellings. The largest component of the program by numbers was disposals and by expenditures acquisitions.

Capital profile

Figure 46 sets out the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction), improvements, redevelopments and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelopment program).

Figure 46: Northern Territory capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars



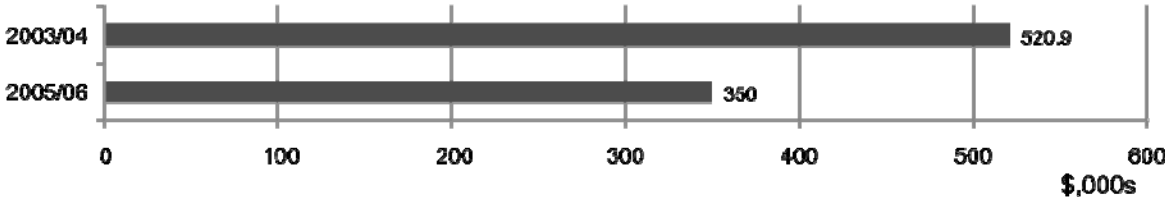
Source: Territory Housing, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Figure 33 demonstrates the primacy of the acquisitions program which, while constituting only 17% of all dwellings comprised over 75% of all expenditures in the asset programs. However, over the period 2003/04 there has been a significant resources shift to improvements which constituted 22% of all expenditures in the asset programs.

Acquisition costs

Figure 47 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchase and building and construction programs.

Figure 47: Northern Territory: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars



Source: Territory Housing, Special Spreadsheet Return to AHURI Asset Management Project, 2008

The real average capital cost per dwelling of acquisitions has fallen from $520 900 in 2003/04 to $350 000 in 2005/06 or by approximately 33%.

Upgrading and redevelopment costs

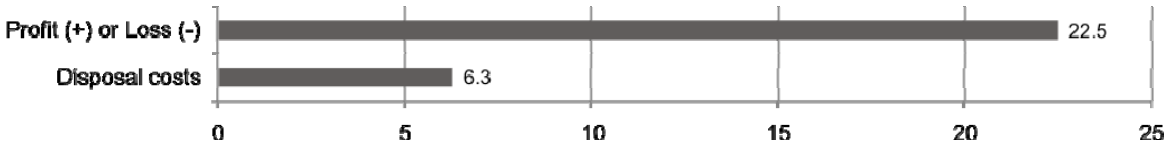
Territory Housing was only able to provide detailed information on upgrading. The average real capital cost per dwelling of upgrades was approximately $110 000 in 2005/06. No disaggregated costs were available for 2003/04.

Disposal costs and profit or loss

Figure 48 sets out the real average disposal cost per dwelling in 2005/06.

Real average disposal costs per dwelling grew from approximately $3100 in 2003/04 to $6300 in 2005/06 or by 98.9%. Real average profits per dwelling sold averaged $22 500 in 2005/06 increasing from $20 300 in 2003/04 or by 10.7%.

Figure 48: Northern Territory: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: Territory Housing, special spreadsheet return to AHURI Asset Management Project, 2008

Future asset liabilities

SHAs were asked to provide quantitative information on their dwelling estimated portfolios':

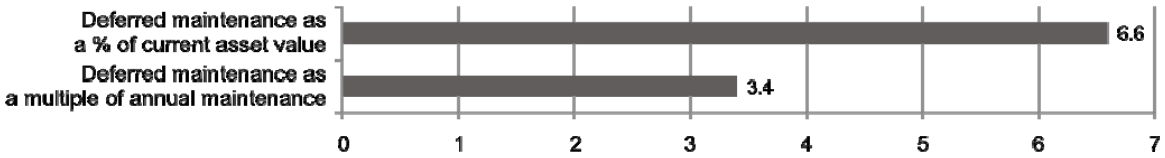
- deferred maintenance backlog
- future life-cycle costs
- asset loan principal outstanding.

Territory Housing estimated its deferred maintenance backlog as being approximately $80 million in 2005/06 but was not able to supply information on the other two components of liability analysis.

Some performance indicators

Figure 49 shows that in 2005/06 deferred maintenance is approximately 3.4 times the cost of the current maintenance program and represents 6.6% of dwelling asset value.

Figure 49: Northern Territory: asset management capital: some financial performance indicators



Source: Northern Territory, special spreadsheet return to AHURI Asset Management Project, 2008

Qualitative

Asset planning: development

Territory Housing does not have formal strategic asset plans, a capital investment strategic plan, a maintenance strategic plan or asset disposal strategic plan.

Asset planning: financial criteria and assessment

The major assessment is a comparison of the cost upgrading versus the cost of replacement. The key criteria are:

- strategic demand
- financial – costs of disposal versus build new
- full upgrade or health and safety only.

The main financial tools are market analysis and appraisal.

Territory Housing has not assessed the ideal dwelling mix.

As yet TH does not use probability analysis to assist in its asset choices.

Asset analysis

Territory Housing does conduct demand management analysis, but has not, as yet developed a condition assessment or life-cycle costing program. The main reason that the condition assessment process has not been proceeded with is that one such assessment was conducted which was found to be cost-prohibitive. A new asset management system is currently being researched.

The Department has not undertaken any income stream analysis but has applied value management techniques.

Asset management

Territory Housing does not outsource the asset management functions of its maintenance program.

The maintenance classification used by Territory Housing is:

- Maintenance – unforeseen, urgent, vacate, service requirements.
- Minor works – works less than $300 000 for continuous items, disability modifications and domestic violence modifications.
- Capital works – works greater than $300 000 being for unit complex upgrades.

In the Territory the isolated and distant location of many assets has a major impact on maintenance costs.

Territory Housing has embarked on a major asset restoration program, a government employee housing program which is anticipated to run over 10-years, estimated at a cost of $80 million.

Financial performance indicators

Territory Housing does not use income stream analysis.

Territory Housing uses the following financial performance indicators (Table 36):

Table 36: Northern Territory: financial performance indicators. Asset management

Area	*Indicator*
Financial return	Yield
Financial performance – short-term	1. Rents collected as % of total rents due minus rents lost to vacant dwellings divided by average units owned in year minus vacant dwellings. 2. Rents written off as % of rents payable. 3. % of maintenance funds spent on responsive versus planned. 4. Average annual operating cost per owned dwelling per week.
Financial performance – long-term	1. Net worth on basis of historic cost price. 2. Market value.

The Department does not calculate economic loss.

Appendix E: Financial attributes: Queensland, (QLD)

Quantitative analysis: operating outcomes

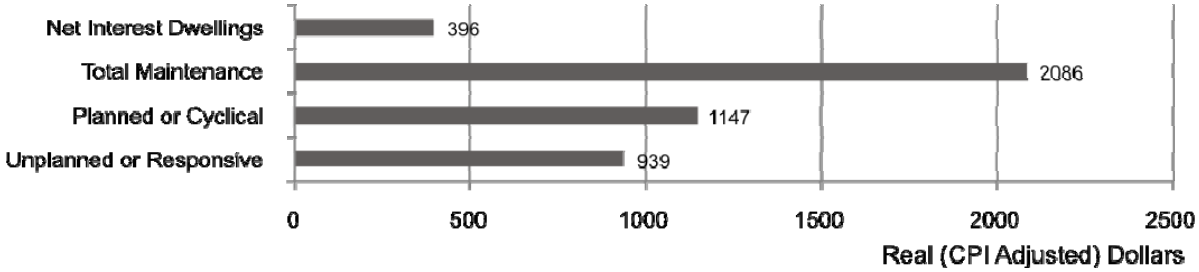
Components of average asset management expenditure

Queensland was unable to disaggregate its expenditure on asset management.

Components of average asset maintenance expenditure

Figure 50 provides the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by the Queensland Department of Housing.

Figure 50: Queensland: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars



Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

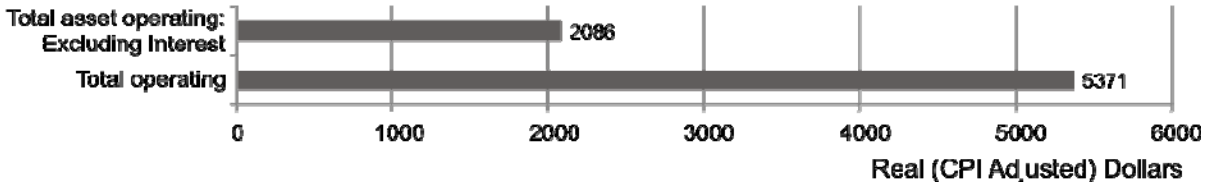
Unplanned or responsive maintenance averaged $939 in 2005/06 while planned or cyclical maintenance cost an average of approximately $1147 of the total average maintenance cost per dwelling, (TM), of $2086. These two main components of maintenance cost represented some 45% and 55% respectively of total average maintenance costs per dwelling.

Real unplanned maintenance increased some 16.4% between 2003/04 and 2005/06 with real planned maintenance increasing by 16.3% over the same period.

Comparative average total asset expenditure

Figure 51 sets out the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 51: Queensland: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars



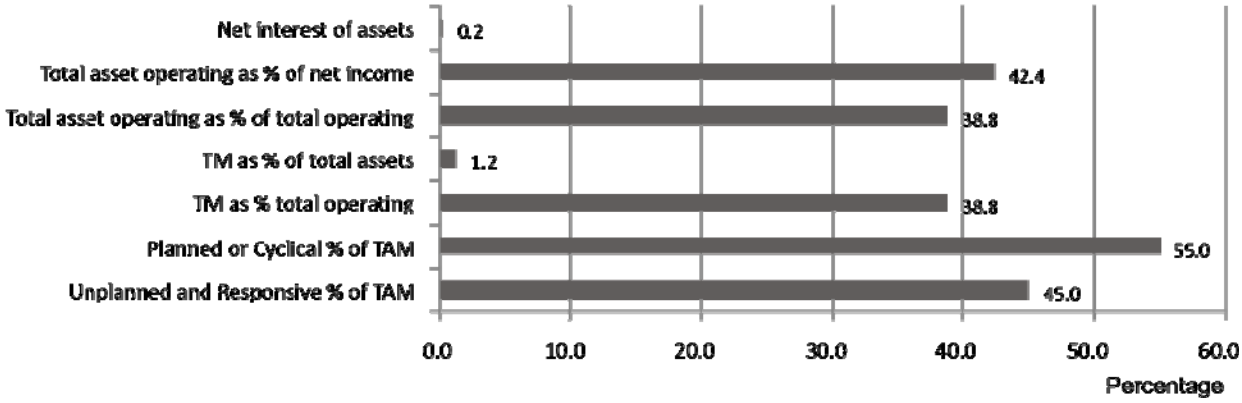
Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/06 average asset operating expenditure per dwelling totalled $2086 representing some 39% of total average operating expenditure and TAOE grew by some 16.4% real over the period 2003/04 to 2005/06.

Total asset expenditure: a summary of some indicators

Figure 52 sets a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 52: Queensland: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

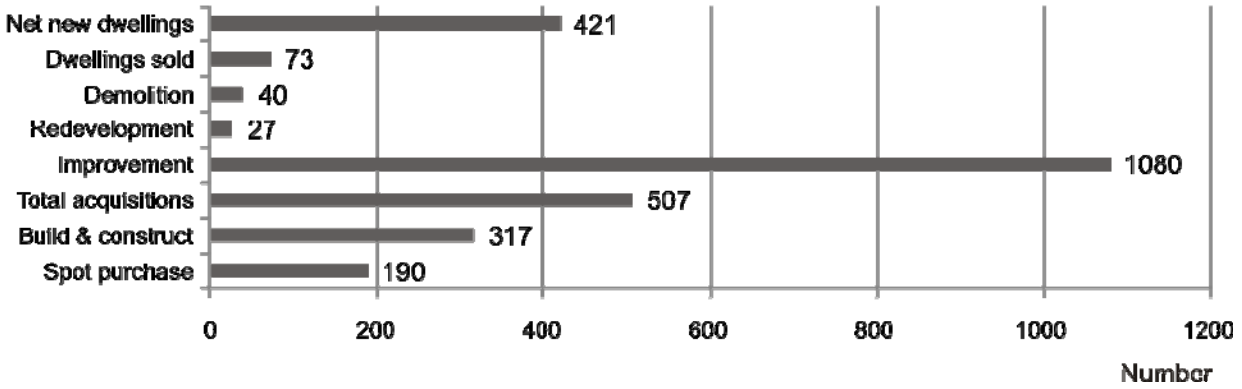
The graph shows that total maintenance represents more than a third of total operating expenditure (excluding depreciation and net interest) but just 4.2% of total assets. TAOE represents approximately 39% of total operating expenditure and approximately 42% of net income. while net interest costs are relatively low at just 0.2% of total assets.

Quantitative: capital

Stock adjustments

Figure 53 sets out the numbers of stock subject to spot purchase, building and construction; improvements; redevelopment; demolition and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Figure 53: Queensland: stock adjustments: 2005/06: numbers



Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

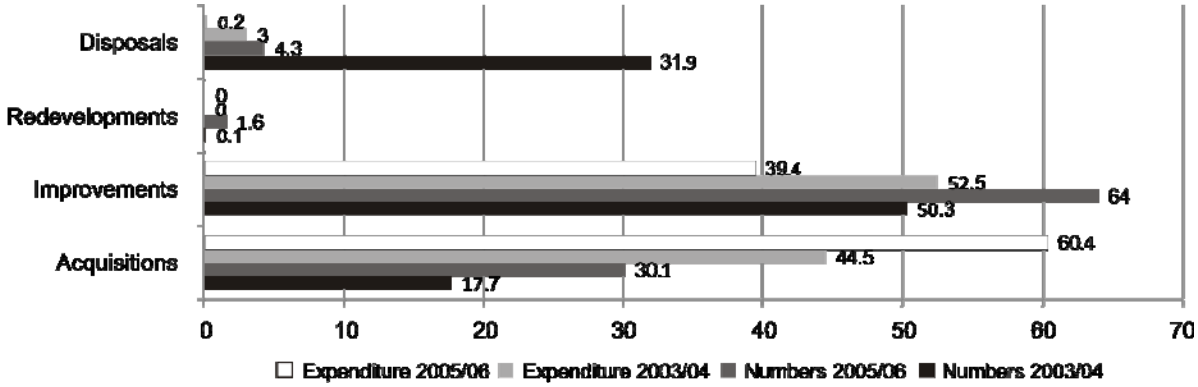
Approximately 507 dwellings were acquired in 2005/06 and 73 dwellings sold for a net increase of 421 dwellings. By far the largest component of the program by both numbers and expenditures related to improvements with over 1,800 dwellings subject to a substantial refit in this year. Redevelopment of existing stock was a relatively minor priority.

Capital profile

Figure 54 sets out the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction),

improvements redevelops and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelop program).

Figure 54: Queensland capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars



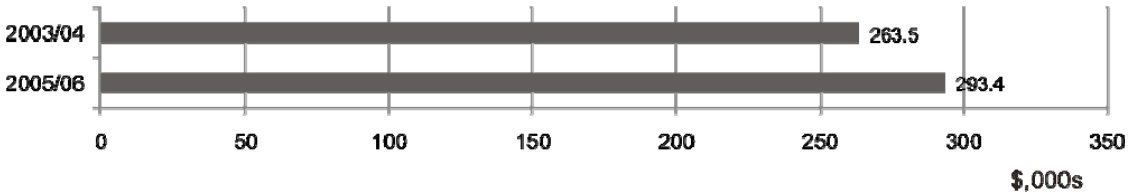
Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Figure 54 demonstrates that in 2005/06 improvements dominate the numbers of dwellings subject to the asset program but acquisitions dominate the expenditures. However, over the period 2003/04 there has been a significant resources shift to acquisitions which constituted only 17% of all dwellings and 44% of all expenditures in 2003/04 and in 2005/06 made up 30% and approximately 60% of all dwellings and expenditures respectively in the asset programs.

Acquisition costs

Figure 55 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchases and building and construction programs

Figure 55: Queensland: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars



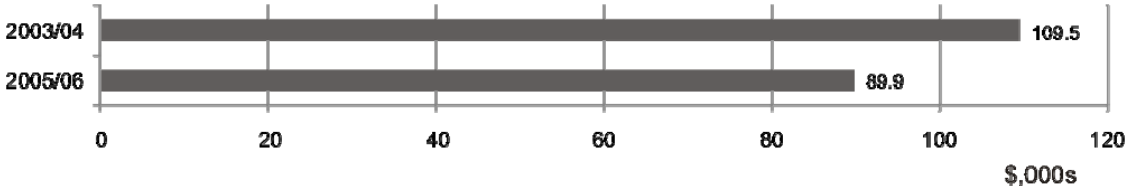
Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

The real average capital cost per dwelling of acquisitions has grown from $263 500 in 2003/04 to $293 400 in 2005/06 or by 11.3%.

Upgrading and redevelopment costs

Figure 56 sets out the real average capital cost per dwelling of upgrading. Queensland was unable to provide disaggregated information on redevelopments. In Queensland's case the cost of neighbourhood improvements was unable to be disaggregated and no expenses were capitalised to projects.

Figure 56: Queensland: dwelling upgrades and redevelopments: real average capital costs per dwelling: $000s: June 2006 dollars



Source: QLDDoH, Special Spreadsheet Return to AHURI Asset Management Project, 2008

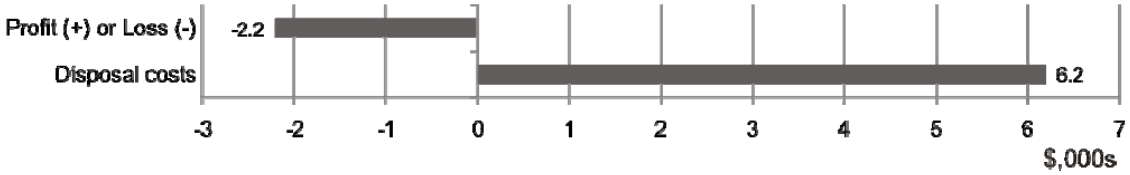
The average real capital cost per dwelling of upgrades was approximately $109 500 in 2003/04 and $89 900 in 2005/06, having fallen by some 18% over the period.

Disposal costs and profit or loss

Figure 57 sets out the real average disposal cost and profit and loss per dwelling in 2005/06.

Real average disposal costs per dwelling fell from $9800 in 2003/04 to $6200 in 2005/06 or by 37%. Real average profit or loss per dwelling fell from a profit of $1400 in 2003/04 to a loss of $2200 in 2005/06.

Figure 57: Queensland: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: Queensland, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

Queensland Housing indicated that it had no deferred maintenance liability and did not estimate future life-cycle costs. Its real 2005/06 asset loan liability is approximately $23 million. This represented $500 per dwelling or 0.26 of 1% of the 2005/06 asset value.

Qualitative

Asset planning: development

Queensland Housing is also well advanced in its development and implementation of asset planning. It has a strategic asset plan, a capital investment strategic plan, and a maintenance strategic plan but has yet to develop an asset disposal plan.

Through its planning the Department has identified an ideal dwelling mix based on current and potential future client profile.

One of the aims of the asset strategy is to maintain housing flexibility to handle potential future changes in client profiles.

Asset planning: financial criteria and assessment

The main criteria and assessment procedures are:

→ strategic objectives

- service delivery objectives
- available funds
- asset conditions and required cost of repairs and replacements.

Acquisitions are driven by a 'value for money' framework which measures the timeliness and cost of delivery, and quality of the end product against industry benchmarks.

Asset disposal is driven by an asset review process which considers the value and condition of the dwelling, redevelopment potential, cost of replacement and cost of upgrading.

Queensland Housing does not use probability analysis techniques to assess strategic asset choices.

Asset analysis

Queensland Housing conducts condition assessments but not life-cycle modelling. A full condition assessment of all dwellings is conducted every 3-years with a safety and health inspection annually. The key outputs are:

- a property standard index
- rating for each major component (e.g. bathroom, kitchen, etc.)
- comparison of performance between different types/age of housing
- types of accessibility features available in every dwelling.

Value management techniques have not yet been used and Queensland Housing does not use income stream analysis.

Asset management

While Queensland Housing outsources the actual maintenance works, it does not outsource the management of the asset planning and analysis process.

The split between the costs of responsive and planned maintenance has remained relatively stable in recent years.

No major asset restoration program has been embarked upon or considered necessary.

Financial performance indicators

Queensland Housing uses the following financial performance indicators (Table 37).

Table 37: Queensland: Financial Performance Indicators: Asset Management

Area	*Indicator*
Financial performance – short-term	1. Average annual operating cost per owned dwelling per week. 2. Percentage of maintenance funds spent on responsive or unplanned repairs compared to planned or cyclical maintenance. 3. Land asset value per dwelling. 4. Building asset value per dwelling.

The Department does not calculate economic loss.

Appendix F: Financial attributes: South Australia

Quantitative analysis: operating outcomes

Components of average asset management expenditure

Housing South Australia was unable to disaggregate their asset management expenditure from their general overhead. As such no analysis was possible on this item.

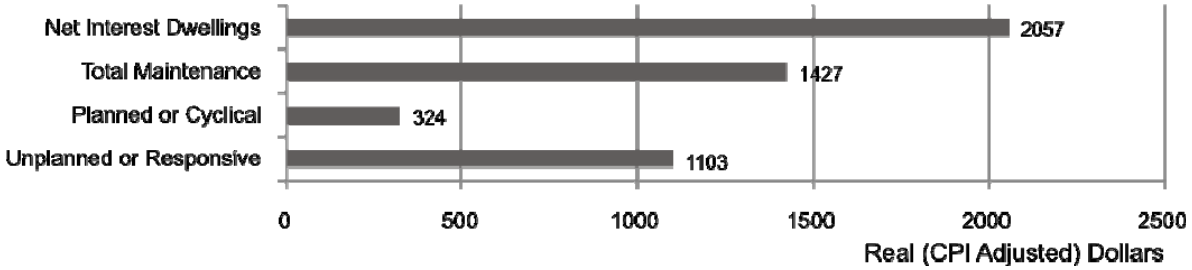
Components of average asset maintenance expenditure

Figure 58 sets out the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by Housing South Australia.

Unplanned or responsive maintenance averaged $1103 in 2005/06 while planned or cyclical maintenance cost an average of approximately $324 of the total average maintenance cost per dwelling, (TM), of $1,427. These two main components of maintenance cost represented some 77% and 23% respectively, of total average maintenance costs per dwelling.

Real unplanned maintenance increased some 47% between 2003/04 and 2005/06 with real planned maintenance increasing by just 2.7% over the same period. Net asset interest costs exceeded $2000 per dwelling, some 44% more than the total maintenance costs.

Figure 58: South Australia: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars

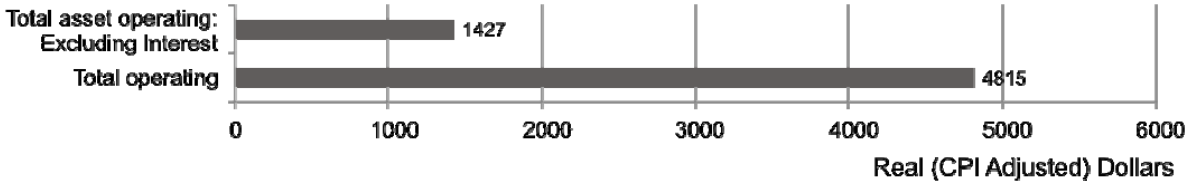


Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Comparative average total asset expenditure

Figure 59 provides the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 59: South Australia: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars



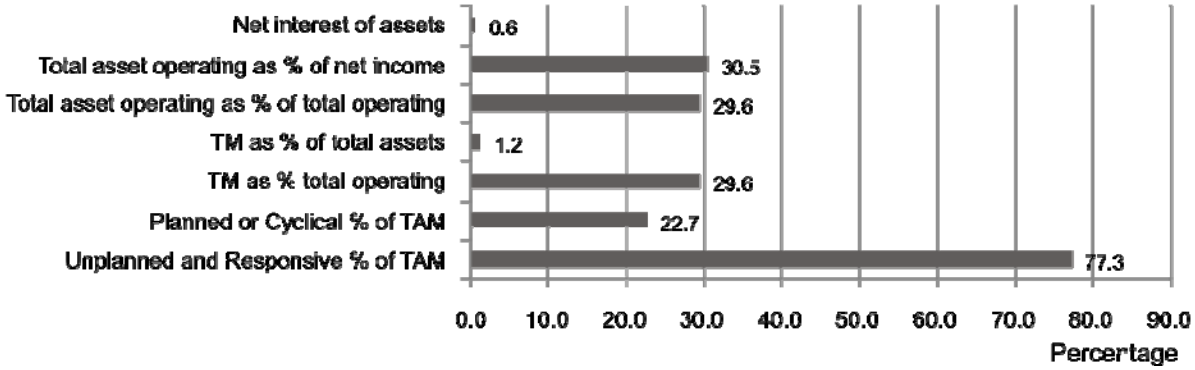
Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/06 average asset operating expenditure per dwelling totalled $1427, representing some 30% of total average operating expenditure and real TAOE grew by a third over the period 2003/04 to 2005/06.

Total asset expenditure: a summary of some indicators

Figure 60 sets a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 60: South Australia: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

The graph shows that total maintenance represents approximately 30% of total operating expenditure (excluding depreciation and net interest) but just 1.2% of total assets. TAOE represents some 29.6% of total operating expenditure and approximately 30.5% of net income, while net interest costs are relatively low at just 0.6% of total assets.

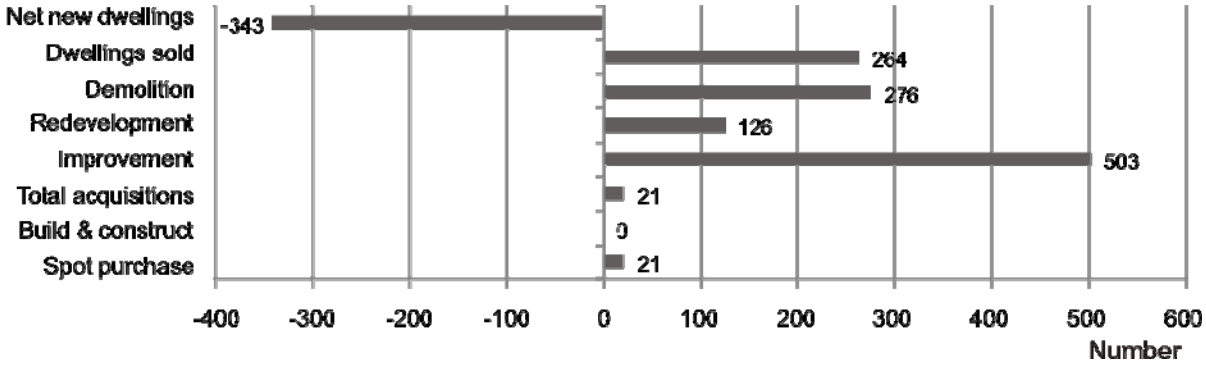
Quantitative: capital

Stock adjustments

Figure 61 sets out the numbers of stock subject to spot purchase, building and construction; improvements; redevelopment; demolitions and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Approximately 21 dwellings were acquired in 2005/06 and 364 dwellings sold for a net decrease of 343 dwellings. By far the largest component of the program by both numbers and expenditures related to improvements with over 500 dwellings subject to a substantial refit in this year. Redevelopment of existing stock was also a major priority with some 126 dwellings being redeveloped and 276 dwellings being demolished.

Figure 61: South Australia: stock adjustments: 2005/06: numbers



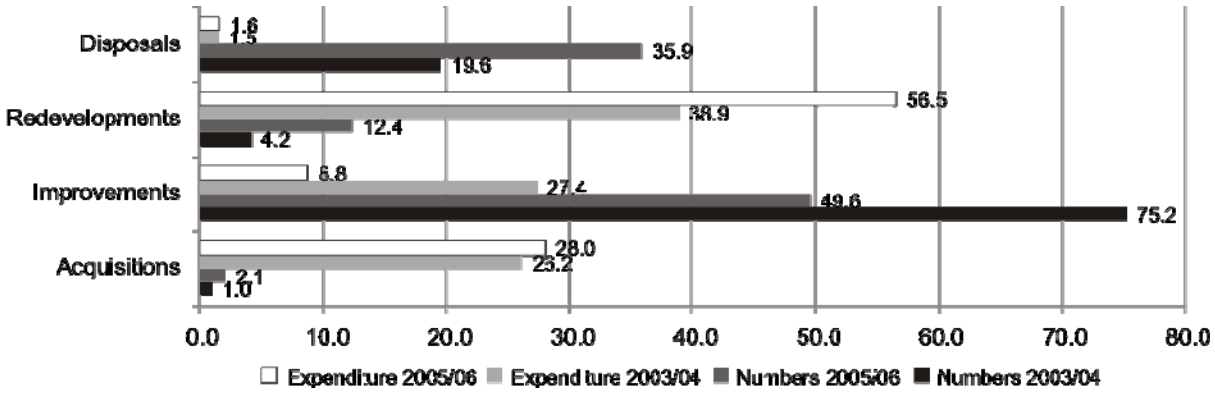
Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Capital profile

Figure 62 sets the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction), improvements, redevelopments and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelopment program).

As would be expected, the improvements program contained the largest proportion of dwellings in the asset program, constituting almost 50% in 2005/06. However, redevelopments were by far the largest component of asset expenditures comprising some 56.5% followed by acquisitions at 28%, while improvements only made up just fewer than 9% of outlays. However, over the period 2003/04 to 2005/06 there has been a significant resources shift to both acquisitions and redevelopments which constituted only 1% and 4% of all dwellings respectively, and 26% and 39% of expenditures respectively. In 2005/06 these two programs made up 14.5% and approximately 78% of all dwellings and expenditures respectively in the asset programs.

Figure 62: South Australia capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars

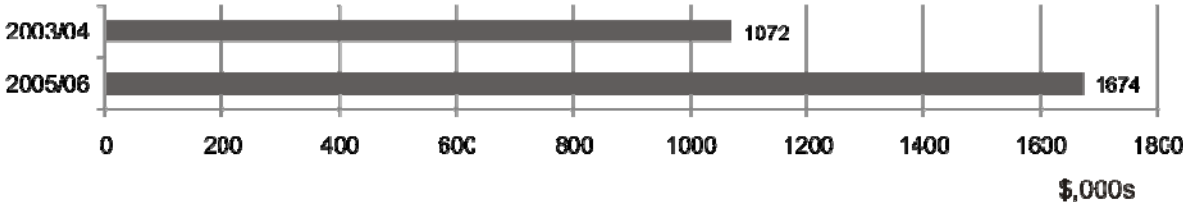


Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Acquisition costs

Figure 63 provides the real average capital cost per dwelling of acquisitions, combining both spot purchase and building and construction programs.

Figure 63: South Australia: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars



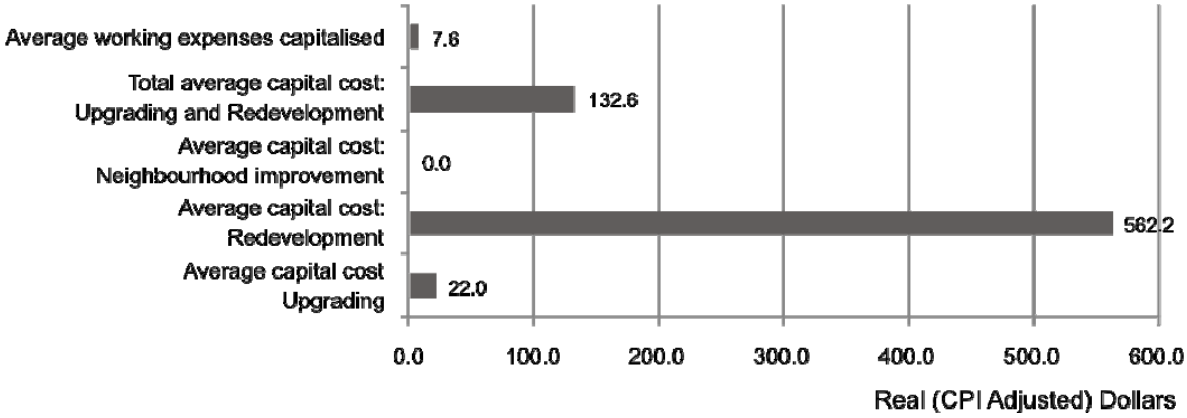
Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

The real average capital cost per dwelling of acquisitions has grown from $1 072 000 in 2003/04 to $1 674 000 in 2005/06 or by 56%. Clearly some special factors must be applying here and the qualitative analysis focuses upon these issues.

Upgrading and redevelopment costs

Figure 64 sets out the real average capital cost per dwelling of upgrading and redevelopment. This section of the analysis also sought information on the average cost of neighbourhood improvements and expenses capitalised to projects. In NSW's case the cost of neighbourhood improvements was unable to be disaggregated and no expenses were capitalised to projects.

Figure 64: South Australia: dwelling upgrades and redevelops: real average capital costs per dwelling: $000s: June 2006 dollars



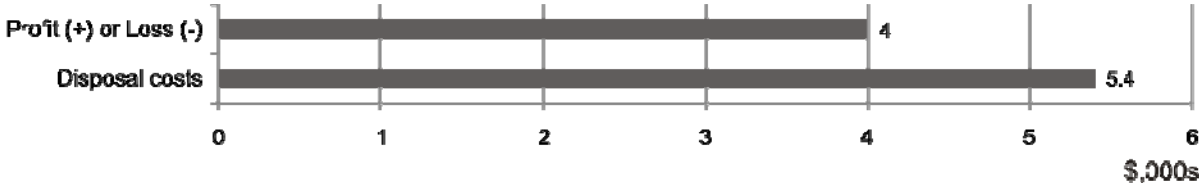
Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

The average real capital cost per dwelling of upgrades and redevelopments was approximately $22 000 and $562 000 respectively, having increased by 48.5% and 49.5% respectively, over the period 2003/04 to 2005/06. While there was some small expenditure on neighbourhood improvement at $33 per dwelling, it does not show on the graph.

Disposal costs and profit or loss

Figure 65 sets out the real average disposal cost and profit and loss per dwelling in 2005/06. Real average disposal costs per dwelling grew from approximately $3100 in 2003/04 to $5400 in 2005/06 or by 75%, while real profit or loss averaged $4000 per dwelling, a decrease of 81%.

Figure 65: South Australia: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: Housing South Australia (HSA), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

Housing South Australia estimated its loan principal outstanding on its assets as being approximately $756.5 million in 2005/06 but was not able to supply information on the other two components of liability analysis.

Some performance indicators

This asset loan liability totalled 13.43% of total dwelling asset value.

Qualitative

Asset planning: development

Housing South Australia (HAS) is well advanced in its development and implementation of asset planning. It has a strategic asset plan, and a capital investment strategic plan. It does not have a separate maintenance strategic or asset disposal plan.

Capital expenditure projections over the next 9-years are factored into the organisation's financial viability strategy. The strategy includes the sale of 8000 dwellings over 9-years to reduce overall stock to a level equivalent to the national average of publicly and privately owned housing.

The organisation is currently in the process of developing a new strategic asset strategy. The Department has not identified an ideal dwelling mix.

Asset planning: financial criteria and assessment

The financial inputs to HSA's strategic plan include:

- asset value
- market and subsidised rent
- maintenance
- rent subsidy
- acquisition and disposal costs.

When assessing options for disposals, HSA takes into account:

- approaches from tenants
- annual regional sales targets
- title
- reductions of large concentrations of public housing.

The organisation makes choices between, holding, upgrading and disposal by estimating the real value of the future maintenance costs using net present value analysis.

As yet the Department does not use probability analysis to assist in its asset choices.

Asset analysis

HSA uses demand management analysis to assist its asset choices. The organisation conducts both condition assessments. A full condition assessment survey was last conducted in 2002/03 and a comprehensive update is planned for next financial year. HAS is currently developing life-cycle costing.

The principal assumptions being used in the life-cycle costing development are:

- maintenance cost growth (3% per annum)
- asset life (40-years)
- dwelling appreciation (3% per annum)
- inflation (3% per annum)
- escalation rates disposal costs (3% per annum).

The cost of a full condition assessment is estimated to be between $4 million and $6 million. Refreshing such information every 5-years implies an annual recurring cost of $1 million.

Asset management

The Department outsources some of its maintenance management but the majority is retained in-house. There are three main definitions:

- Capital (works exceeding $5000 per project)—upgrades, site works, major modifications.
- Responsive—reactive unplanned maintenance, responding to health, safety and security.
- Planned—less than $5000 per project, maintains the amenity, condition and serviceability of the dwelling.

Unplanned maintenance expenditure increased by $6.35 per household over the last 12 months mainly due to asbestos removal costs.

HAS not embarked on a major asset restoration program but is currently assessing the cost of undertaking such a program in the future.

Financial performance indicators

Housing South Australia uses the following financial performance indicators (Table 38):

Table 38: South Australia: Financial performance Indicators. Asset management

Area	*Indicator*
Financial return	1. Internal rate of return 2. Net present value of the income stream
Financial performance – short-term	1. Budgeted versus actual 2. Net cost of services
Financial performance – long-term	1. Market value

The Department calculates economic loss.

The hurdle rate for new developments is 6%.

Appendix G: Financial attributes: Tasmania

Quantitative analysis: operating outcomes

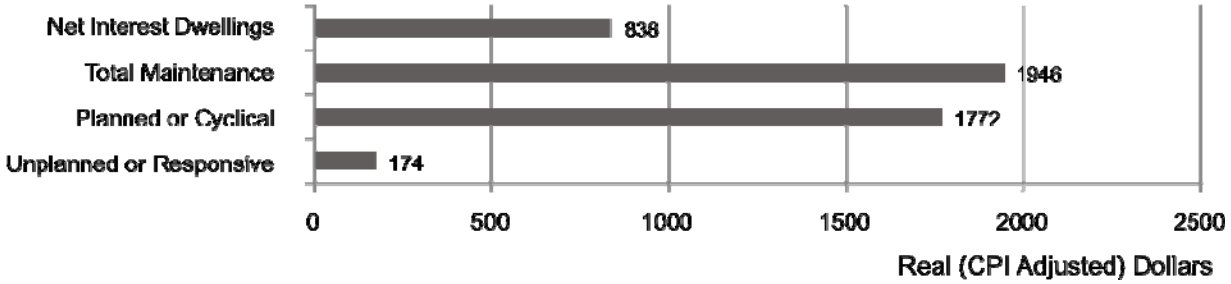
Components of average asset management expenditure

Housing Tasmania could not provide information on asset management expenditure.

Components of average asset maintenance expenditure

Figure 66 sets out the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by Housing Tasmania.

Figure 66: Tasmania: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

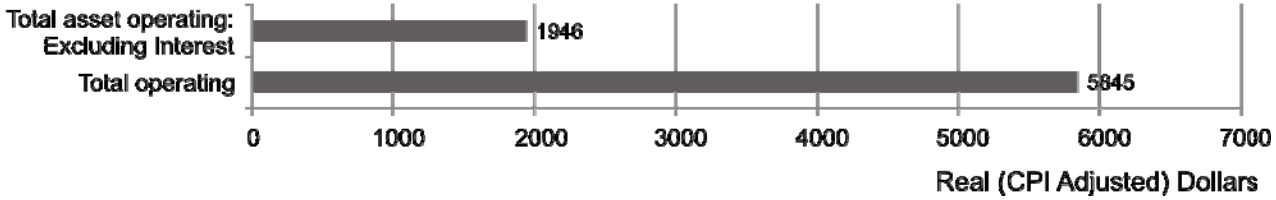
Unplanned or responsive maintenance averaged $174 in 2005/06 while planned or cyclical maintenance cost an average of approximately $1772 of the total average maintenance cost per dwelling, (TM), of $1946. These two main components of maintenance cost represented some 9% and 91% respectively of total average maintenance costs per dwelling.

Real unplanned maintenance increased some 26% between 2003/04 and 2005/06 with real planned maintenance increasing by 49% over the same period.

Comparative average total asset expenditure

Figure 67 sets out the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 67: Tasmania: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

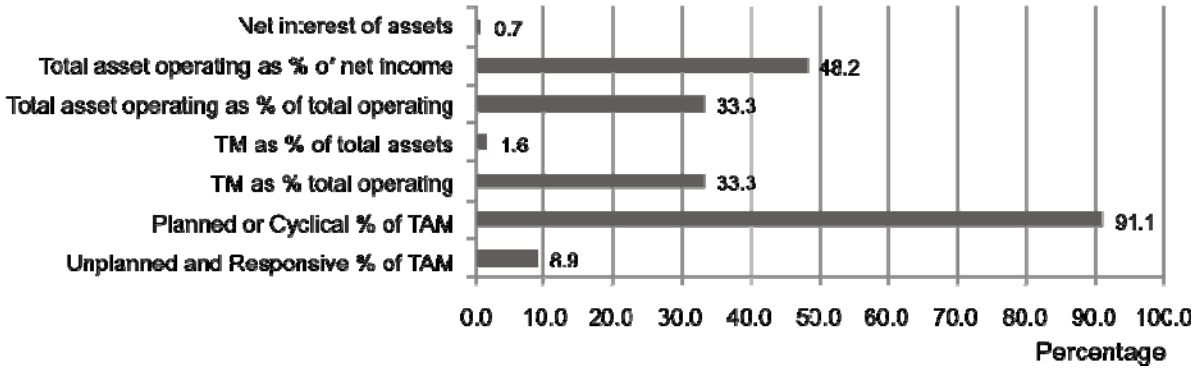
In 2005/06 average asset operating expenditure per dwelling was $1946, representing some 33% of total average operating expenditure and TAOE grew by some 46.5% real over the period 2003/04 to 2005/06.

Total asset expenditure: a summary of some indicators

Figure 68 sets a summary of the main indicators of asset maintenance and total asset expenditure.

The graph shows that total maintenance represents exactly a third of total operating expenditure (excluding depreciation and net interest) but just 1.6% of total assets. TAOE represents some 33.3% of total operating expenditure and nearly 50% of net income, while net interest costs are relatively low at just 0.7% of total assets.

Figure 68: Tasmania: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



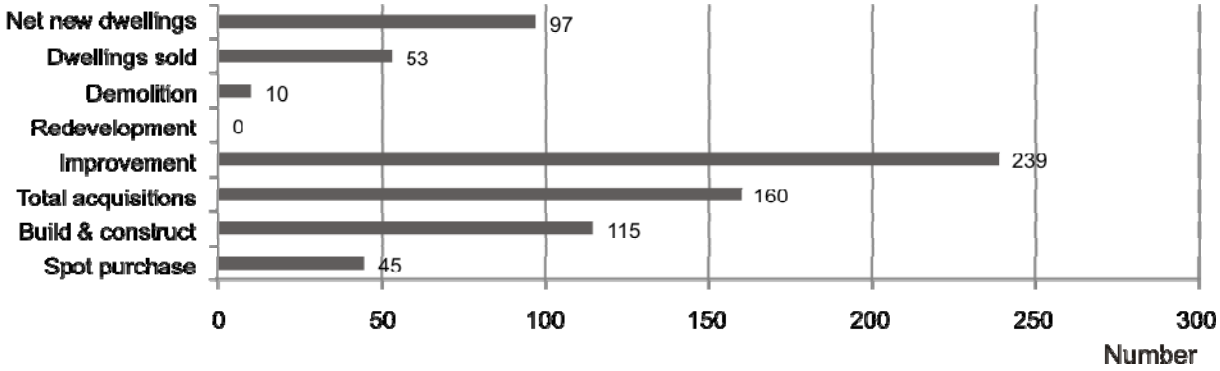
Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Quantitative: capital

Stock adjustments

Figure 69 provides the numbers of stock subject to spot purchase, building and construction; improvements; redevelopment; demolitions and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Figure 69: Tasmania: stock adjustments: 2005/06: numbers



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

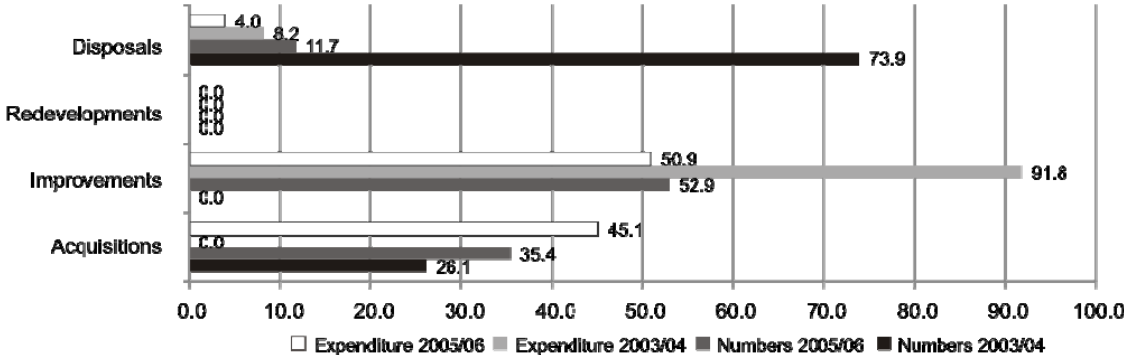
Approximately 160 dwellings were acquired in 2005/06 and 53 dwellings sold for a net increase of 97 dwellings. By far the largest component of the program by both

numbers and expenditures related to improvements with over 239 dwellings subject to a substantial refit in this year.

Capital profile

Figure 70 sets the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction), improvements, redevelopments and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelopment program).

Figure 70: Tasmania: capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

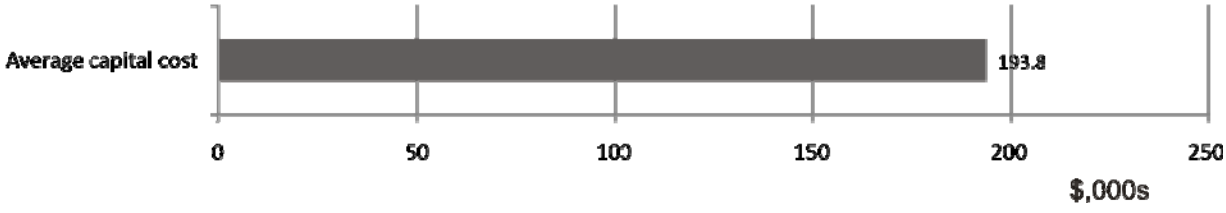
Figure 70 demonstrates the importance of the improvements program which constitutes nearly 53% of all dwellings and 51% of all expenditures in the asset programs. However, over the period 2003/04 there has been a moderate resources shift to acquisitions which constituted 26.1% of all dwellings and 45% of all expenditures in 2003/04 and in 2005/06 made up 35.4% and approximately 45% of all dwellings and expenditures respectively in the asset programs.

Acquisition costs

Figure 71 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchase and building and construction programs

The real average capital cost per dwelling of acquisitions was $193 800 in 2005/06.

Figure 71: Tasmania: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

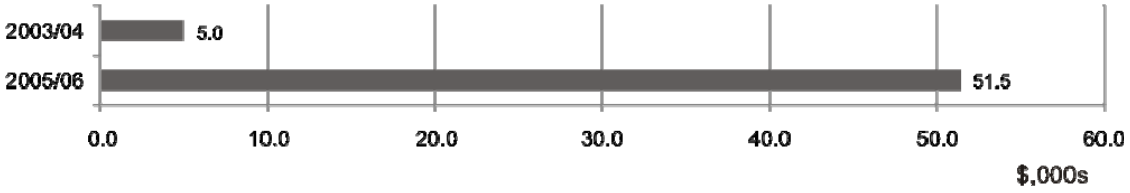
Upgrading and redevelopment costs

Housing Tasmania did not provide expenditure information on redevelopments or historical information on upgrades. The average real capital cost per dwelling of upgrades in 2005/06 was $146 600.

Disposal costs and profit or loss

Housing Tasmania did not supply information on the profit or loss on dwellings. Figure 72 sets out the real average disposal cost per dwelling in 2005/06. Real average disposal costs per dwelling grew from approximately $5000 in 2003/04 to $51 500 in 2005/06 or by 930%. Any special circumstances are discussed in the qualitative section.

Figure 72: Tasmania: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars

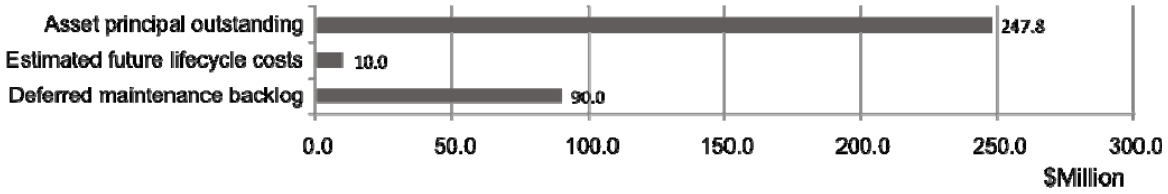


Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

Figure 73 sets out the real future capital asset liabilities of deferred maintenance, lifecycle costing and asset loan principal.

Figure 73: Real future asset liabilities: value $m: June 2006 dollars



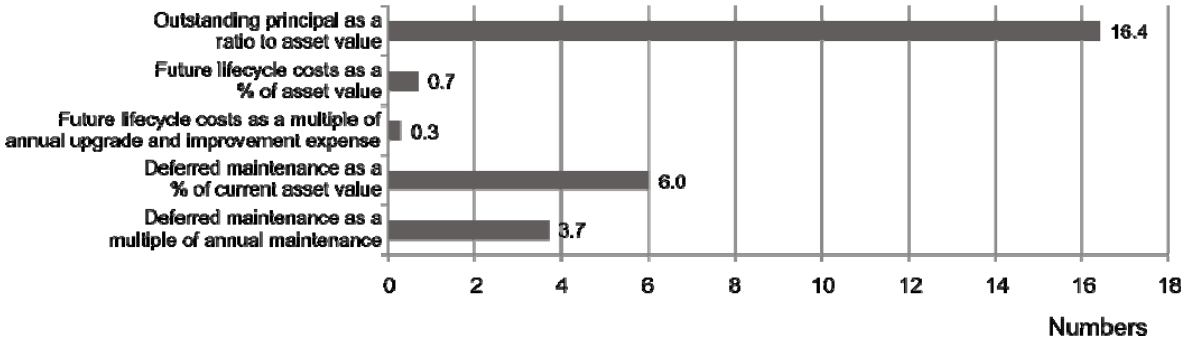
Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008.

Housing Tasmania estimates its deferred maintenance bill as approximately $90 million, its estimated future lifecycle costs as $10 million and the asset loan principal outstanding as $247.8 million.

Some performance indicators

Figure 74 sets out some financial performance indicators for the asset program in Tasmania.

Figure 74: Tasmania: asset management capital: some financial performance indicators



Source: Housing Tasmania (HT), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Deferred maintenance represents approximately 3.7 times the current maintenance expenditure program and 6% of current asset values. Future lifecycle costs are just a

multiple of 0.3 of the annual upgrade and improvement expenditure and represent a very small 0.7% of asset values. However, the outstanding loan liability is some 16.4% of total assets.

Qualitative

Asset planning: development

Housing Tasmania is developing its asset planning. It has a strategic asset plan and an asset disposal strategic plan.

As stated by the Department the main objectives of asset planning are to:

- Reconfigure assets to meet the needs of current and proposed client groups, while providing flexibility to deal with changing circumstances.
- Improve residential amenity.
- Promote regeneration of estates.
- Optimise the value of the portfolio, including unlocking value.
- Provide a context for cost-effective maintenance activities.

Local asset management plans (LAMP) are prepared by each of the four public housing divisions covering the state. These involve our staff assessing each individual property for retention, disposal, upgrade or redevelopment based on the directions set in the higher level plan (LTAP) and the particular circumstances facing the Division and the local management team.

Through its planning the Department has identified an ideal dwelling mix.

Asset planning: financial criteria and assessment

The strategic asset planning process uses the following criteria:

- internal rate of return (IRR)
- asset value
- budget situation
- forward position.

As yet the Department does not use probability analysis to assist in its asset choices.

Asset analysis

The organisation uses a range of asset analysis tools including value for money analyses, NPV and an asset decision-making tool. It also uses demand management analyses.

Housing Tasmania is currently developing a property condition assessment survey and as part of that process will use life-cycle analysis to calculate values for dwelling attributes. In addition to the data on each property's condition the key output will be the ability to identify failure events for particular items and develop 'bundling' of maintenance orders for specialist items. The use of this process elsewhere has been found to reduce responsive maintenance costs per dwelling by approximately 15%.

The Department has not undertaken any income stream analysis but is applying value management principles.

Asset management

The Department outsources its maintenance delivery but not the major part of its asset management.

Types of maintenance expenditure are classified as follows:

- Responsive – no discretion to defer or plan systematically urgent and breakdown.
- Programmed – regular periodic program of maintenance activities.

Responsive maintenance continues to grow due to the ongoing deferral of programmed maintenance as a result of budget pressures.

Housing Tasmania has embarked on a major asset restoration program at a cost of $11.5 million.

Financial performance indicators

Housing Tasmania uses the following financial performance indicators (Table 39).

Table 39: Tasmania: Financial performance indicators. Asset management

Area	*Indicator*
Financial return	1. Sum of the net income and capital return
Financial performance – short-term	1. Rents collected as % of total rents due minus rents lost to vacant dwellings divided by average units owned in year minus vacant dwellings 2. Actual rents written off as % of actual (after rebates) rent payable 3. Average annual operating cost per owned dwelling per week
Financial performance – long-term	1. Market value

The organisation does not calculate economic loss.

Appendix H: Financial attributes: Victoria.

Quantitative analysis: operating outcomes

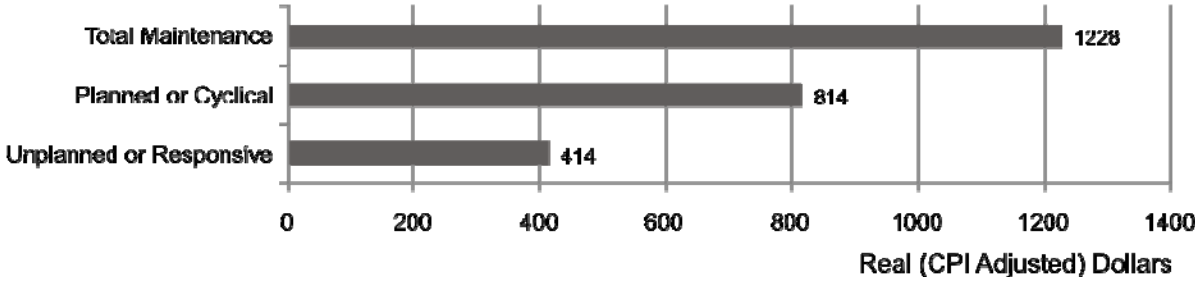
Components of average asset management expenditure

The Office of Housing Victoria was unable to provide financial information on asset management expenditure.

Components of average asset maintenance expenditure

Figure 75 sets out the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06 and includes the average net interest per dwelling being paid by the Office of Housing Victoria. .

Figure 75: Victoria: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars



Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Unplanned or responsive maintenance averaged $414 in 2005/06 while planned or cyclical maintenance cost an average of approximately $814 of the total average maintenance cost per dwelling, (TM), of $1228. These two main components of maintenance cost represented some 34% and 66% respectively, of total average maintenance costs per dwelling.

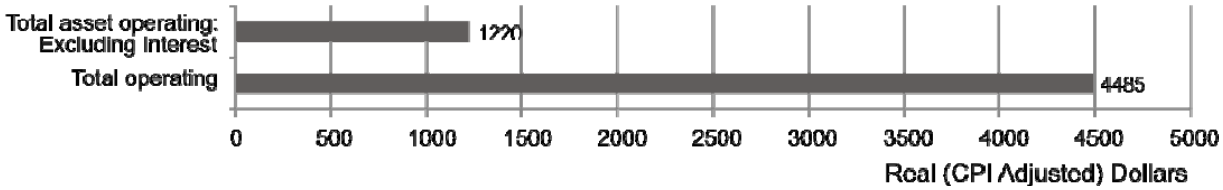
Real unplanned maintenance increased some 6.8% between 2003/04 and 2005/06 with real planned maintenance increasing by just 14.1% over the same period.

Comparative average total asset expenditure

Figure 76 sets out the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

In 2005/06 total average asset operating expenditure per dwelling totalled $1220, representing some 27% of total average operating expenditure and TAOE grew by some 11.5% real over the period 2003/04 to 2005/06.

Figure 76: Victoria: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars

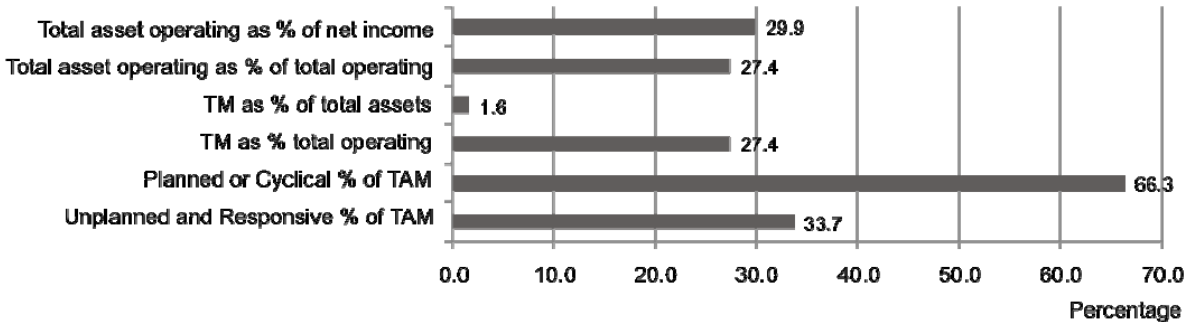


Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Total asset expenditure: a summary of some indicators

Figure 77 sets a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 77: Victoria: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

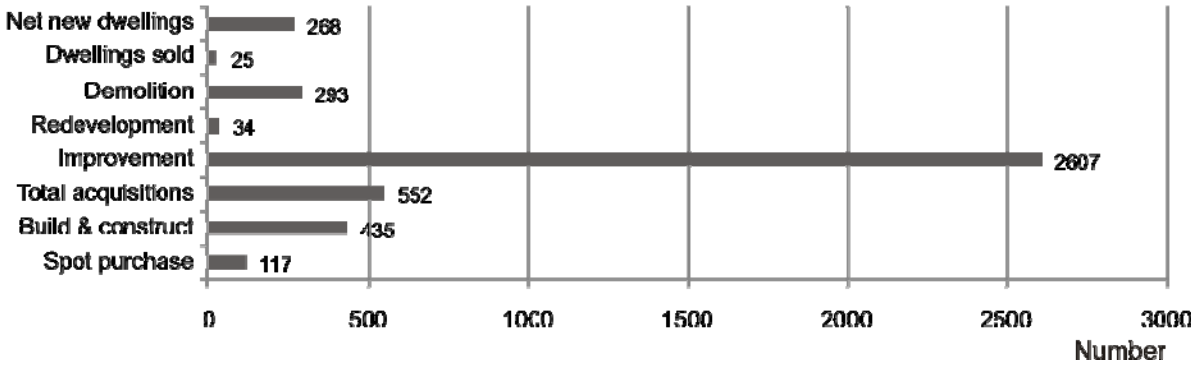
The graph shows that total maintenance represents a moderate 27.4% operating expenditure (excluding depreciation and net interest) but just 1.6% of total assets. TAOE represents some 27.4% of total operating expenditure, and approximately 29.9% of net income.

Quantitative: capital

Stock adjustments

Figure 78 sets out the numbers of stock subject to spot purchase, building and construction; improvements; redevelopment; demolitions and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Figure 78: Victoria: stock adjustments: 2005/06: numbers



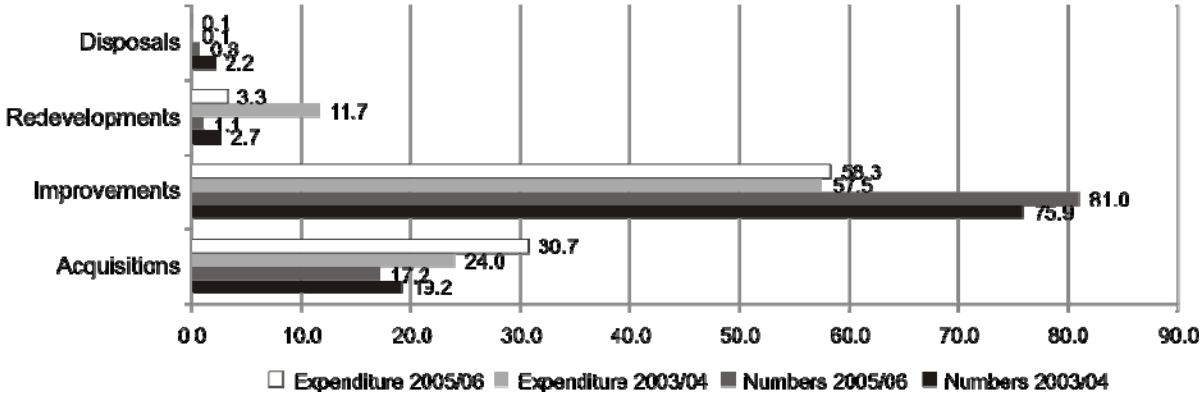
Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Approximately 552 dwellings were acquired in 2005/06 and 25 dwellings sold for a net increase of 268 dwellings after redevelopments and demolitions. By far the largest component of the program by both numbers and expenditures related to improvements, with over 2,600 dwellings subject to a substantial refit in this year. Redevelopment represented a minor part of capital asset activities.

Capital profile

Figure 79 sets out the capital profile. This demonstrates the absolute primacy of the improvements program which constitutes nearly 81% of all dwellings and 58% of all expenditures in the asset programs. However, over the period 2003/04 there has been a significant resources shift to acquisitions which constituted only 19% of all dwellings and 24% of all expenditures in 2003/04 and in 2005/06 made up 24% and approximately 31% of all dwellings and expenditures respectively, in the asset programs.

Figure 79: Victoria: capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars

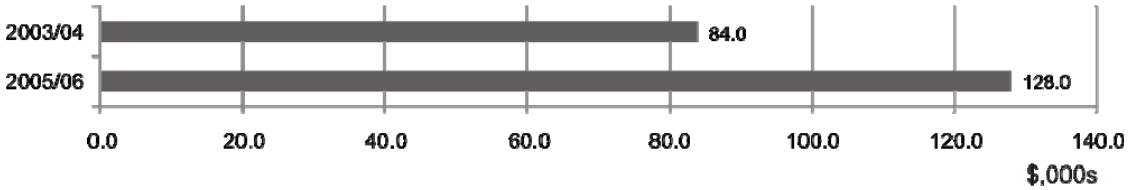


Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Acquisition costs

Figure 80 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchase and building and construction programs.

Figure 80: Victoria: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars



Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

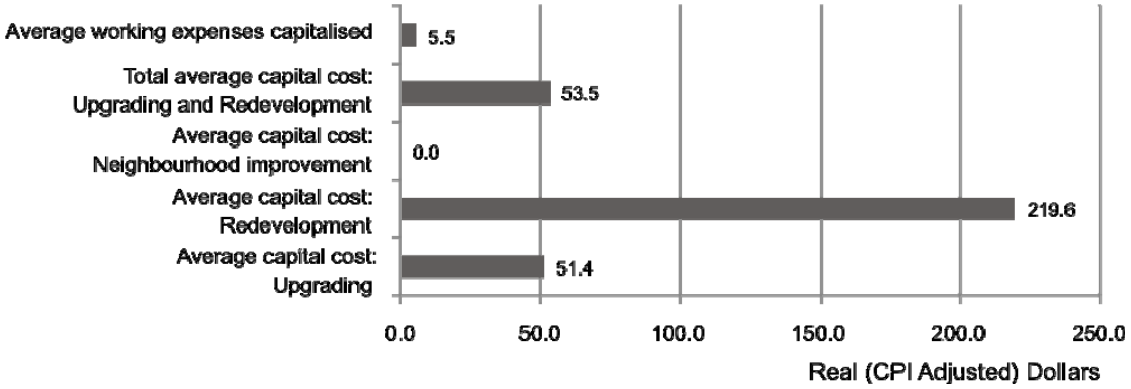
The real average capital cost per dwelling of acquisitions has grown from $84 000 in 2003/04 to $128 000 in 2005/06 or by 52%.

However, these costs are dramatically lower than that applying to other states, and therefore it is possible it does not include land costs. This will be further examined with the Office of Housing.

Upgrading and redevelopment costs

Figure 81 sets out the real average capital cost per dwelling of upgrading and redevelopment. This section of the analysis also sought information on the average cost of neighbourhood improvements and expenses capitalised to projects. In Victoria's case the cost of neighbourhood improvements was unable to be disaggregated and no expenses were capitalised to projects.

Figure 81: Victoria: dwelling upgrades and redevelops: real average capital costs per dwelling: $000s: June 2006 dollars



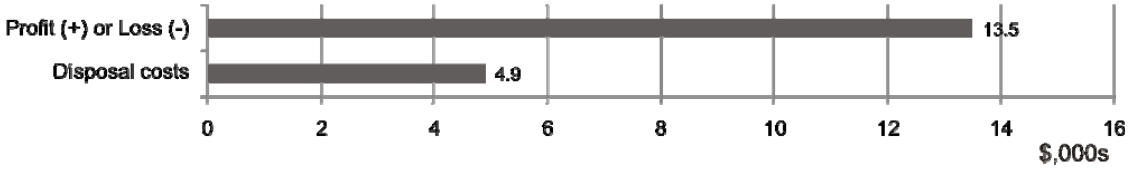
Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

The average real capital cost per dwelling of upgrades and redevelopments was approximately $51 000 and $219 000 respectively, having increased by 0.6% and fallen by approximately 26% respectively, over the period 2003/04 to 2005/06.

Disposal costs and profit or loss

Figure 82 sets out the real average disposal cost per dwelling of in 2005/06. Real average disposal costs per dwelling grew from approximately $4200 in 2003/04 to $6100 in 2005/06 or by 46.7%.

Figure 82: Victoria: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: Office of Housing Victoria (OoHV), Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

SHAs were asked to provide quantitative information on their dwelling estimated portfolios':

- deferred maintenance backlog
- future life-cycle costs
- asset loan principal outstanding.

Victoria is in the process of quantifying some of these components of asset analysis.

Qualitative

Asset planning: development

The Office of Housing is well advanced in the development of asset planning but slightly less advanced than NSW in the finalisation of key asset analysis tools. The Office has completed a strategic asset plan, a capital investment strategic plan, a maintenance strategic plan and an asset disposal strategic plan.

The principal asset planning objectives as outlined by the OoH are to:

- maintain and enhance the asset base
- regenerate and reprofile the asset base
- redevelop the asset base
- attract private and not-for-profit sector funding for major capital works.

The Office has not identified an ideal dwelling mix.

Asset planning: financial criteria and assessment

The principal financial criteria applied to the capital investment strategic plan are:

- cost estimates from feasibility studies.

When deciding upon whether to hold upgrade or dispose the Office assesses:

- land values
- market demand
- a range of stock condition and age factors.

The financial factors considered in the disposal decision are:

- weekly market rent
- capital improved value
- building value
- rates
- administration costs
- net rate of return (NROR)
- new construction costs.

Asset analysis

Demand management is regularly used to help in the assessment of requirements to reprofile the asset base.

The Office of Housing conducts regular condition assessments and is developing a life-cycle costing program.

Condition assessments occur every 3-years and condition data is captured on approximately thirty-five strategic property attributes. These attributes have been specifically chosen based on their capacity to determine suitability for improvement works and disposal assessment. Inspectors are required to record this data on the basis of repair or replace assessment and the life-cycle of each of the attributes. The system has been developed in order to limit the actual cost assessment process by requiring predominately life-cycle entries.

The Office has not undertaken any income stream analysis.

Asset management

The OoH outsources its maintenance works but not management and has completed a major asset restoration program.

Financial performance indicators

The Office of Housing Victoria uses the following financial performance indicators (Table 40).

Table 40: Victoria: financial performance indicators. Asset management

Area	*Indicator*
Financial return	Net rate of return

Appendix I: Financial attributes: Western Australia

Quantitative analysis: operating outcomes

Components of average asset management expenditure

Homeswest was unable to provide disaggregated financial information on asset management expenditure.

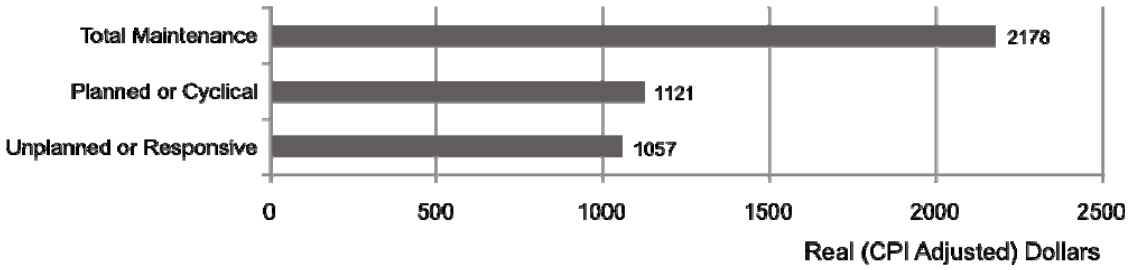
Components of average asset maintenance expenditure

Figure 83 sets out the average expenditure per dwelling for unplanned or responsive, planned and total maintenance for 2005/06.

Unplanned or responsive maintenance averaged $1057 in 2005/06 while planned or cyclical maintenance cost an average of approximately $1121 of the total average maintenance cost per dwelling, (TM), of $2178. These two main components of maintenance cost represented some 49% and 51% respectively, of total average maintenance costs per dwelling.

Real unplanned maintenance increased some 20.4% between 2003/04 and 2005/06 with real planned maintenance increasing by nearly 30% over the same period.

Figure 83: Western Australia: components of average asset maintenance expenditure per dwelling, 2005/06: June 2006 dollars

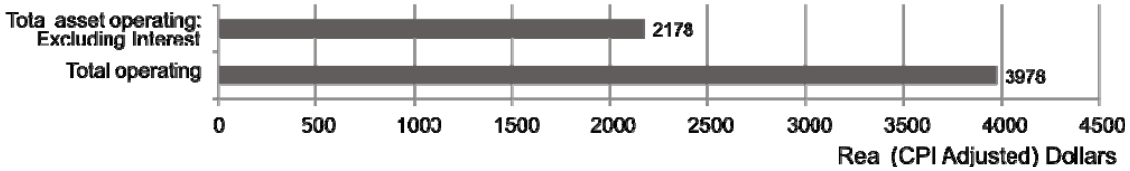


Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Comparative average total asset expenditure

Figure 84 sets out the total average asset operating expenditure, (TAOE), per dwelling for 2005/06 as a component of total operating expenditure (excluding depreciation and net interest).

Figure 84: Western Australia: total average asset operating expenditure per dwelling: 2005/06: June 2006 dollars



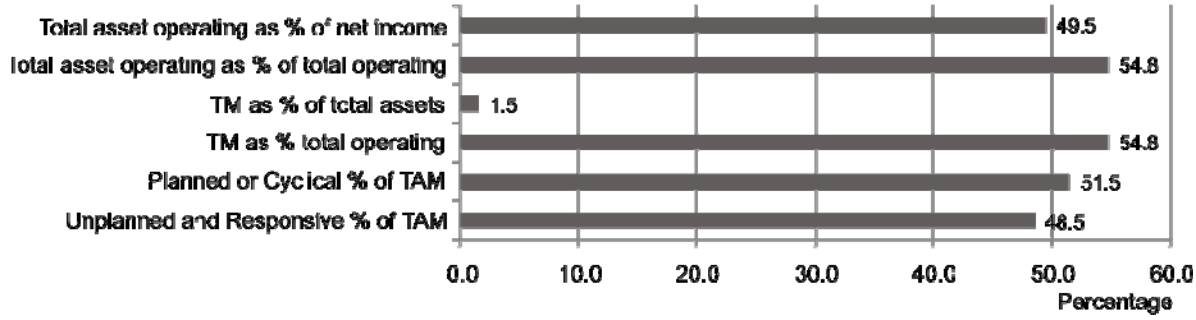
Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

In 2005/06 average asset operating expenditure per dwelling totalled $2178, representing some 55% of total average operating expenditure and TAOE grew by nearly 25% real over the period 2003/04 to 2005/06.

Total asset expenditure: a summary of some indicators

Figure 85 sets a summary of the main indicators of asset maintenance and total asset expenditure.

Figure 85: Western Australia: percentages of asset maintenance and total asset expenditure per dwelling and some indicators: 2005/06: June 2006 dollars



Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

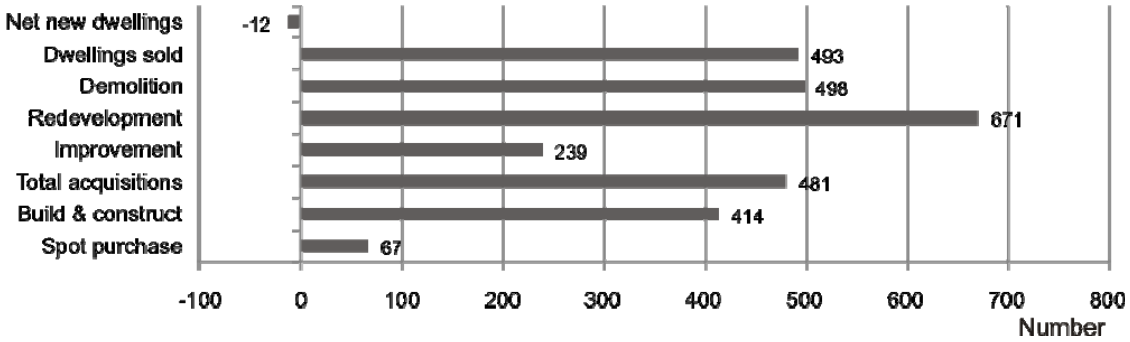
The graph shows that total maintenance represents more than 50% of total operating expenditure (excluding depreciation and net interest) but just 1.5% of total assets. TAOE represents some 54.8% of total operating expenditure, and approximately 50% of net income.

Quantitative: capital

Stock adjustments

Figure 86 sets out the numbers of stock subject to spot purchase, building and construction; improvements; redevelopment; demolitions and dwellings sold for the year 2005/06. The graph documents the net new dwellings arising from the asset management programs.

Figure 86: Western Australia: stock adjustments: 2005/06: numbers



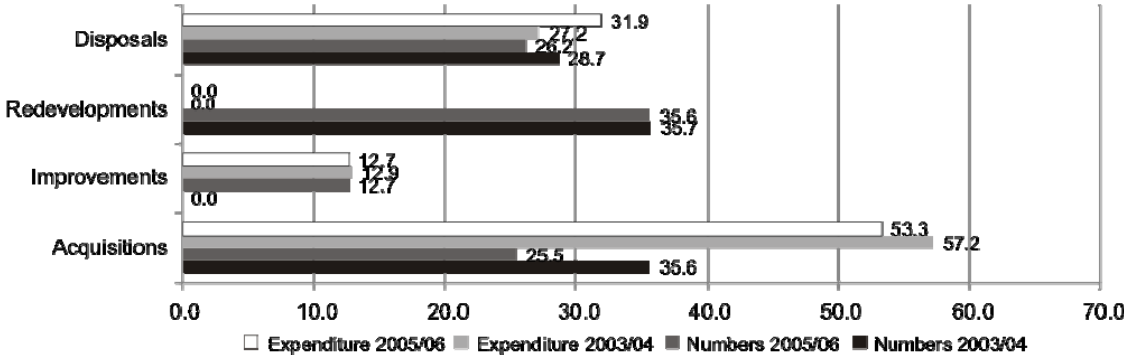
Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Approximately 481 dwellings were acquired in 2005/06 and 493 dwellings sold for a net fall of 12 dwellings. By far the largest component of the program by both numbers related to redevelopments with 670 dwellings subject to a substantial refit in this year. Disposals represented the second largest program, at 493 dwellings (leaving aside demolitions which are counted in the redevelopment program) and acquisitions also featured heavily, comprising some 481 dwellings. .

Capital profile

Figure 87 sets the proportion of the total asset management expenditure program absorbed by acquisitions (both spot purchase and building and construction), improvements, redevelopments and disposals, (the numbers of demolitions and costs of demolitions being absorbed within the redevelopment program).

Figure 87: Western Australia: capital profile 2005/06: proportion of total asset program absorbed by program components: stock nos. and real expenditures: June 2006 dollars



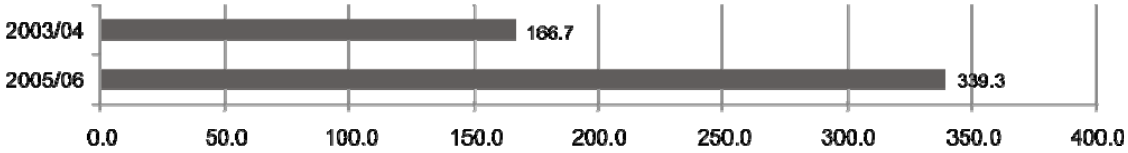
Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

The graph demonstrates how by dwelling numbers the asset program is fairly evenly distributed across acquisitions, redevelopments and disposals. However, by expenditure, acquisitions now dominate, representing some 53% of all expenditures, although there has been a significant resources shift to improvements in the last 3-years. In 2003/04 improvements and disposals represented 0% and 27% of expenditures and in 2005/06 made up 13% and approximately 32% of all expenditures respectively, in the asset programs.

Acquisition costs

Figure 88 sets out the real average capital cost per dwelling of acquisitions, combining both spot purchase and building and construction programs

Figure 88: Western Australia: dwelling acquisitions: real average capital costs per dwelling: $000s: June 2006 dollars.



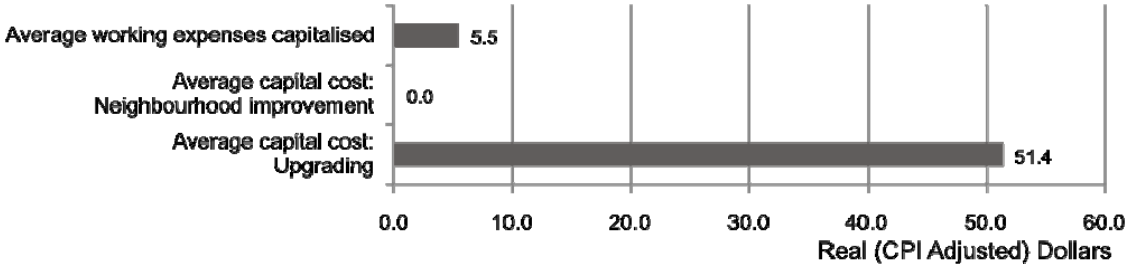
Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

The real average capital cost per dwelling of acquisitions has grown from $166 700 in 2003/04 to $339 300 in 2005/06 or by 105%, reflecting the major increase in prices in the capital of Perth.

Upgrading and redevelopment costs

Figure 89 sets out the real average capital cost per dwelling of upgrading. Financial information on redevelopments is incorporated in the upgrade numbers. This section of the analysis also sought information on the average cost of neighbourhood improvements and expenses capitalised to projects.

Figure 89: Western Australia: dwelling upgrades and redevelops: real average capital costs per dwelling: $000s: June 2006 dollars



Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

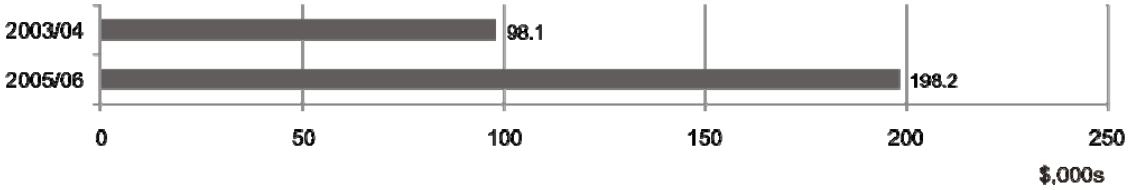
The average real capital cost per dwelling of upgrades was approximately $163 200 and neighbourhood improvements $100 and working expenses capitalised to projects was $3200 in 2005/06

Disposal costs and profit or loss

Homeswest did not supply any figures on profit or loss. Figure 90 sets out the real average disposal cost per dwelling in 2005/06.

Real average disposal costs per dwelling grew from approximately $98 000 in 2003/04 to $198 000 in 2005/06 or by 102%. This number is being checked with Homeswest.

Figure 90: Western Australia: dwelling disposals: average real disposal costs and profit or loss per dwelling: 2005/06: $000s: June 2006 dollars



Source: Homeswest, Special Spreadsheet Return to AHURI Asset Management Project, 2008

Future asset liabilities

No financial information was provided on future asset liabilities.

Qualitative

Asset planning: development

Homeswest has a strategic asset plan, a maintenance strategic plan and an asset disposal strategic plan.

Through its planning, the Department has identified an ideal dwelling mix.

Asset planning: financial criteria and assessment

Regions have an asset management database which includes age, condition, structural type, asbestos and housing type.

Consideration is given to budget, cost per square metre for land and construction, land availability and market influences.

As yet the Department does not use probability analysis to assist in its asset choices.

Asset analysis

Homeswest conducts demand analysis and is developing a condition assessment procedure with an estimated cost of $8 million to inspect and record building condition for all stock and create asbestos registers for approximately 20,000 properties. It is, as yet, not developing life-cycle costing approaches.

The key outputs of this process will a cost of maintenance backlog and an asbestos removal program.

The Department has not undertaken any income stream analysis.

Asset management

Homeswest does not outsource its maintenance program.

Maintenance requirements are classified as follows:

- Day-to-day—routine fair wear and tear, tenant liability and appliance replacement.
- Vacated—as above.
- Estates—common area upgrades, security lighting, common watering, garden and driveway upgrades.
- Insurance—recoverable and non-recoverable.
- Improvement/refurbishment – improvements by adding a feature, refurbishment by renewing components, painting and replacing floors or cladding.
- Planned – replacement of existing electrical, cladding, floors, sewer and roofs.
- Programmed – cyclical maintenance on the external components of a dwelling.

Responsive maintenance continues to grow at the expense of planned, but this is expected to change.

Homeswest has embarked on a major asset restoration program which is still in progress.

Financial performance indicators

Homeswest uses the following financial performance indicators (Table 41).

Table 41: Australia: financial performance indicators. Asset management

Area	*Indicator*
Financial performance – long-term	1. Market value

The Department does not calculate economic loss.

AHURI Research Centres

Queensland Research Centre
RMIT Research Centre
Southern Research Centre
Swinburne-Monash Research Centre
UNSW-UWS Research Centre
Western Australia Research Centre

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